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Music and time

Tempomorphism: nested temporalities in perceived experience of music.

A thesis submitted to Middlesex University

**In partial fulfilment of the requirements for the degree of
Doctor of Philosophy**

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Faculty of Arts

Middlesex University

December 2004

**THESIS
CONTAINS
CD/DVD**

Abstract.

This thesis represents the results of a theoretical and practical investigation of acoustic and electro-acoustic elements of Western music at the start of the twenty-first century, with specific attention to soundscapes. A commentary on the development of soundscapes is drawn from a multidisciplinary overview of concepts of time, followed by an examination of concepts of time in music. As a response to Jonathan Kramer's concept of 'vertical' music (a characteristic aesthetic of which is an absence of conventional harmonic teleology), particular attention is paid to those theories of multiple nested temporalities which have been referred to by Kramer in support of non-teleological musical structures.

The survey suggests that new musical concepts, such as vertical music, have emerged from sensibilities resulting from the musical and associated styles of minimalism, and represent an ontological development of aesthetics characteristic of the twentieth century. An original contention of the debate is that innovations in the practice of music as the result of technological developments have led to the possibility of defining a methodology of process in addition to auditive strategies, resulting in a duality defined as 'tempomorphic'. Further observations are supplied, using findings derived from original creative practical research, to define tempomorphic performance, which complete the contribution to knowledge offered by the investigation. Tempomorphism, therefore, is defined as a duality of process and audition: as auditive tool, tempomorphic analysis provides a listening strategy suited to harmonically static music; as a procedural tool, it affords a methodology based primarily on duration.

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Chapter 1: Introduction

This thesis combines a commentary on, and investigation (both theoretical and practical) of, elements of the Western acoustic and electro-acoustic environment at the start of the twenty-first century, a characteristic element of which is the notion of soundscapes. The processes of soundscape music, exhibiting characteristics more reliant on sonic texture than either melody, conventional harmonic movement, or virtuoso improvisation, are partially explained by Jonathan Kramer's term 'vertical'. Vertical music is described by Kramer as 'music without phrases, without temporal articulation, with total consistency, [existing] between simultaneous layers of sound, not between successive gestures' (1988, p. 55).

This inquiry responds to the idea of a vertical listening strategy with the suggestion that the generation of soundscapes involves a duality of empirical analysis and procedure, therefore further defining the strategy of listening to include a strategy of process. It is an original contention of this thesis that such a duality of analysis and process is suitably described by the term 'tempomorphic' (literally 'timechanging'), which has been developed in the course of research, and based on observations of changing perceptions of time for the listener. As an auditory tool, therefore, tempomorphic analysis provides the practitioner with a listening strategy suited to harmonically static music. Used as a tool of process in conjunction with empiric analysis, a tempomorphic procedure affords the practitioner a methodology based primarily on duration, the outcome of which has a textural characteristic, combined with a nonteleological formal structure.

The development of the theoretical and practical methodology associated with, and resulting in, the definition of tempomorphism is a response to (in addition to Kramer's theory) exposure to soundscapes made with tape- and digital-delay devices. A validation for tempomorphism found in the practice of soundscaping, combined with support from theories of nested hierarchical temporalities, is a practical goal of the investigation. The predominant characteristic of process, resulting from the survey, is regarded as one of duration: to view music from a tempomorphic perspective is to consider it as a series of nested durations.

1.1 Research objectives

The overall research objective (for which investigative aims have been formulated) is to explore the procedure and theory underlying vertical music. This question is addressed from a number of analytic perspectives in order to supply as comprehensive an evaluation as possible. From a theoretical perspective, the question is addressed with a review of literature dealing with temporal issues and views which focus on music and time, culminating in a survey of temporal and musical concepts. From an aesthetic perspective, the stylistic development of vertical music is addressed, placing it in a cultural context.

In order to evaluate ways in which vertical music works from a practical perspective, a review of methodologies has served to inform and facilitate the heuristic methodology developed to address the practical element of the project. A primary objective governing the course of practical research has been to use an exploration of six *umwelts*, or nested temporalities, as a compositional tool.¹ The exploration of multiple *umwelts* has provided a comparative and evaluative context for vertical characteristics in music.

The four hypotheses serving to guide the inquiry fall into categories defined as aesthetic, technical, and performance and compositional, and these headings roughly define the structural components of the overall thesis. Firstly, that aesthetic considerations influencing the subject of musical temporality are supplied by global (interdisciplinary) and musical concepts of time (discussed in chapter 2, 'Concepts of Time'). Secondly, in addition to issues relating to evolving musical style, technical perspectives of music polarise between theory and emergent technology respectively, and form a feedback loop, as discussed in chapter 3, 'Concepts of Time in Music'. Thirdly, that performance issues (impacting on any practical research undertaken) feature aspects of improvisation and structure, as discussed in chapter 4, 'Definitions of Tempomorphic Performance'. Fourthly, compositional issues should be addressed using the empirical findings of a practical research element in the investigation, with further confirmation from extant examples suggested in the course of research.

1.2 Roots of the inquiry

The roots of this project lie in my interests as a musician. As a guitarist using

technological innovations in late twentieth- and early twenty-first-century Western Europe, adaptation and review of criteria and application is a characteristic of the instrument, acoustic and electric designs for which continue to evolve: reviewed application of processing techniques applied to performance, production and capture of electro-acoustic music is a related characteristic. A formative element in the evolution of the inquiry derives from the London music culture of 1977. The revolution caused by the arrival of Punk Rock was also characterised by the unlikely but frequent companion style of Reggae at London venues, and a focus on Dub-style techniques in recording practice. Reggae offered a 'laid-back' but equally innovative social and listening experience compared to the aggression of Punk, featuring a functional dance music with a distinctive rhythmic character disseminated through recordings forged using studio techniques featuring delay, reverb, and a stripping away of non-rhythmic elements, to enhance and develop a version of popular 'vertical' music. Attention was drawn to the use of studio techniques to produce and compose music which fed back into mainstream recorded music, especially in the development of drum sounds. The techniques of producers such as Lee Scratch Perry, in my view, were later formalised and intellectualised by Brian Eno's theories of 'The Studio As An Instrument' (Eno and Mills. 1986, p. 100). Much later, during a lesson in composition my tutor, Adam Gorb, described his interests in (what I now think of as teleological) composition eloquently and concisely. I described my interest in playing, with the aid of processing devices, music that 'somehow moves sideways'. Adam played a Conlon Nancarrow recording in recognition of non-conventional approaches, but I felt I didn't possess the terminology - in fact I wondered whether the terminology existed - to either do justice to the idea or match his eloquence. My interest in music that 'moves sideways' persists, with the hope that this survey provides a greater descriptive vocabulary for music that doesn't readily fit into any other category.

1.3 Guiding intentions

As the survey has developed, personal interests have proved to be the hidden intention behind, firstly, the general subject of inquiry, secondly, a featured style of the investigation and thirdly, the main practical element of music-making. These three areas of interest have respectively arisen from a number of contributing

factors. Firstly, an interest in time has arisen from the way musical experience features dualities of time (rehearsal time, performance time, composition time) side by side with every-day subjective and objective time. An interest in music forged from a melange of styles and cultures has existed since hearing the eclectic music of Davey Graham's Folk, Blues and Beyond album in 1975, which supplied a metanarrative of, or commentary on, Western European stylistic development. The application of time-delay devices to create space and ambience (originating in dub reggae techniques), provided an example of how to 'use time' to make music. Secondly, an interest in minimalism has arisen in part as the result of the intellectualisation of practice evident in the approaches of Steve Reich and Philip Glass. The feedback loop of applied technology demands development of process characterised by composers such as Reich and Glass. A characteristic isolation of constituent elements in minimalism is resonant of the strength of reduced elements in dub music. Minimalism reflects music's relationship to the other arts and culture, a characteristic of which is the evolution of ideas typified, in the case of minimalism, as a progress from the orthogonal criteria of neo-plasticism.

Thirdly, an interest in tempomorphism signifies both the springboard for and goal of the investigation. The practice of music that 'moves sideways' made with devices formed the practical genesis of the thesis. Other contributive factors include soundscaping, which, for the solo musician, has an ontology traceable to the prepared piano, both musically and socio-economically. The potential functionality of ambient music, as demonstrated by Eno, suggests 'new' urban music forms. Tempomorphic soundscaping is a result of the application of devices, or technology, as a compositional and performance element.

1.4 Stages of development

Preliminary developments of this project date, in addition to those referred to above, from reading an article by sound engineer Larry Fast (<http://synergy-emusic.com>) describing a paradigm shift in the application of effects occasioned by technological improvements, from those enhancing harmony to those evoking ambience: the application of gated reverb to the drum sounds of Peter Gabriel's third solo album (1980), on which Fast worked, testifies to his projection. Post-graduate research towards the award of M. A. resulted in the study of twentieth-century

Western music styles, the relationship between music and neo-plasticism, and an introduction to theories of nested temporal hierarchies.

At the commencement of the survey, while defining the research area, a review of vertical and ambient music processes led to a focus on defining a methodology combining process and analysis. The initial definition of the research area led to a working title of 'telemorphic studies'. On reflection, this term seemed to imply a 'stretching out', rather than a changing, of temporal shape, and was amended to 'tempomorphic studies'. An early decision was made to develop an investigative methodology tested and informed with practical empiric research. This led to the generation of music and multidisciplinary artefacts constituting a practical element to the investigation.

The initial phase of research in the performing arts faculty at Brunel University meant proximity to performing arts students (in addition to those researching music) for whom a practical element for inclusion in research material is commonplace, and came to be recommended for this thesis, partly as a solution to the inclusion of multidisciplinary elements. Working with the Brunel New Music Ensemble (B.N.M.E.) provided a valuable resource for ensemble composition and research feedback, not least in affording a 'test group' for tempomorphic performance. The B.N.M.E., (under the directorship of Colin Riley) was also invaluable for providing a practical application for scored compositions. Exposure at the 2002 conference on Liminality afforded a testing ground for solo tempomorphic performance. Attendance of postgraduate research seminars at Brunel (in addition to providing teaching support for performing arts undergraduates) demonstrated musicologists as the poor relations to performing arts researchers in terms of critical theory.ⁱⁱ The dating method used to identify artefacts is derived from a Brunel research seminar on computer graphics. The opportunity to publish what appears as chapter 4 of this survey in the on-line performing arts journal *Body Space Technology*ⁱⁱⁱ was a significant stage in the development of the project.

In the general development of the project, gaining the perspective of Robert Fripp provided the project with an independent view of music and time, impartial to the survey, for comparison. An attendant aim of contacting the guitarist was to identify the link between Fripp's soundscaping and his approach to pedagogy applied through *Guitar Craft*. The emergence of minimalism as a focus of stylistic

commentary provided terminology and background context for soundscaping.

The search for a practical methodology was inspired by the models suggested by multidisciplinary research, specifically the application of orthogonal theories in plasticism, combined with Earle Brown's concern with the mobile structures of Alexander Calder. Indeed, the watershed of the project, in retrospect, was the emergence of the original model provided by empiric research for this project, defined as Hierarchy, Plasticity and Form (HPF). A gradual focus on performance documented with video tape served as a method of evaluation for the HPF methodology which emerged in the course of research, in addition to betraying characteristics of increasingly isolated independent research. Criteria for the selection of images was provided with a comparative precedent in the form of Le Corbusier's designs for the 1958 Phillips pavilion (which also spawned the Edgard Varèse composition Poème Electronique).

1.5 Original aspects of the project

Several fundamental ideas referred to in the project are not original, but have been combined in an original way, such as the nested temporalities of umwelts, and relationships between music and the arts. Aspects believed to be wholly original to the project, however, include the definition of a tempomorphic duality of applied process and analytic tool; the attempt to generate music using nested umwelts as a compositional device; the combined compositional approach for investigation of umwelts using through-composed scores and tempomorphic studies; the development of a model for multidisciplinary methodology defined by Hierarchy, Plasticity and Form; the artefacts generated in the course of practical research; and a stylistic review linking plasticism, minimalism and soundscapes. The inclusion of Fripp's views in the project, though not necessarily original in an academic survey, add an original element by way of their combination with other elements.

1.6 Implications of the project

The social and economic effects of short-term thinking on the global environment necessitate a recognition of 'long now' responsibility in order to nurture a more custodian approach by humanity to preserve and honour natural resources. A debate of temporal issues promoting an awareness of precedent/consequent

loops on a microcosmic level, where the effects can be easily observed, will inform the macrocosm, and, it is hoped, further the meme of the expanded moment.

Other implications of this survey similarly relate to the address of temporal concepts, in that increased debate of nested temporalities has potential for therapeutic effects, as evidenced in the example of La Monte Young's extended days of 27 hours. From the perspective of personal musicianship, it has been useful to inform continued practice with more clearly defined intentions afforded by the terminology and ideas discussed in the survey.

The survey of tempomorphism in the context of nested temporalities in perceived experience of music is, following this introductory chapter, structured as follows. Chapter 2 addresses concepts of time from perspectives of culture, philosophy, objectivity, biology, psychology, subjectivity, selected arts, and language. Chapter 3 discusses concepts of time in music, supplying an overview of conventions before going on to discuss the emergence of the minimalist style and its impact. In chapter 4 there is a discussion of performance leading to an argument detailing characteristics of tempomorphic performance. Chapter 5 concludes the survey with an evaluation of findings and thoughts regarding future possibilities. The methodology developed for practical research, and notes on composition, development and evaluation of artefacts are included in the appendices. Additional material is included in the appendices as appropriate.

ⁱAs Fraser explains, the idea that each species has an Umwelt, a universe defined by the receptors and effectors of an animal, is attributed to the work of the biologist Jakob von Uexküll, who 'drew attention to the fact that an animal's receptors and effectors determine its world of possible stimuli and actions and hence the extent and nature of its universe. He called such a species-specific universe the 'Umwelt of the species' (Fraser, 1982, p. 19). The Umwelt theory contributes to the development of an hierarchical theory of time, which, in Kramer's opinion, reflects Fraser's conviction that time (not simply our perception of time) has 'evolved throughout the history of the universe' (Kramer, 1988, p. 394). 'Each level, or Umwelt, has its own temporal horizon, its own laws, and its own mood. As time, the world, man, and civilisation have evolved to higher Umwelts, the lower (earlier) levels have not disappeared. Thus man today can find himself in environments or contexts that suggest not only nootemporal (linear) but also atemporal, prototemporal, eotemporal, and biotemporal Umwelts.' (Kramer, 1985, p. 395)

ⁱⁱ Poor relations: During a Brunel research seminar (2000), Laudan Nooshin commented on the disparity between the critical language used by music researchers and that used by performing arts researchers. Such disparity was attributed in part to a focus on musical, rather than linguistic, expression.

ⁱⁱⁱ (Doyle, Robert. 'Definitions of Tempomorphic Performance'
<http://www.brunel.ac.uk/depts/pfa/bstjournal/1no12/journal1no2.htm>)

Chapter 2: Concepts of Time

2.1 Introduction

The following overview of concepts of time seeks to address interpretations of time from physical and psychological perspectives. In the context of the physical sciences, as discussed below, time is a phenomenon to be measured and evaluated by degree, and is interpreted from an objective perspective. In comparison, psychological time – anthropological temporality including, but not exclusive to, physical time – depends on perceptions of the observer and therefore is perceived from a subjective perspective.

The overview of temporal perceptions provided in this section of the investigation is explored in order to inform and underpin further discussion of temporal perspectives relating to the experience of music in subsequent sections. As will be seen, perspectives of time addressed here are derived from multiple disciplines and form a broad context of values for the individual observer to draw upon. An objective of the following discussion, therefore, is to view the microcosm of concepts of time for the individual within the macrocosm of concepts of time for the society of the individual. In order to progress from the wider social arena to the individual subject of investigation, research using a heuristic methodology (see appendix 12: Methodologies for practical research), has suggested a number of categories for the grouping of findings. Therefore, the categories into which the following concepts of time have been organised are those of Culture, Philosophy, Scientific Method, Biology, Psychology, Aesthetic Values, Selected Arts, and Language¹. (Temporal perceptions attributed to music are addressed in chapter 3.)

The development of a satisfactorily coherent methodology for a comprehensive evaluation of concepts of time has proved problematic: the multidisciplinary and universal nature of temporality offers a broad variety of issues for inclusion with an attendant potential for error and neglect. The complexity of temporal issues to be discussed threatens diversion from the overall goal of a structured debate focussing on temporal experience in music.

Concepts of temporal perception are addressed using a continuous exploratory structure, in which Biology precedes Psychology, which in turn precedes

an evaluation of Aesthetic values. However, there are contiguous as well as continuous relationships between these categories, as evidenced by the proposition that a given temporal perception (such as the cyclic time exhibited in Bali (Kramer, 1988, p. 24)) reflects a philosophical value sympathetic to a cultural value, or is based on a linguistic value (see McTaggart's negative thesis described in 'The Static versus the Dynamic Temporal' (1968, p. 65), refuting the passage of time).

A discussion following a continuous approach to these relationships has parallels with teleological temporality (the passage of time), while a discussion exploring contiguous relationships has parallels with atemporality (an absence of temporal movement). To consider temporality and atemporality is to consider time as having dual or multiple natures. The dual or multiple nature of temporality is clearly defined by Rescher's description of the orthodox interpretation of Aristotle's discussion in which propositions refer to the atemporal ($2 + 2 = 4$), the transtemporal (the moon circles the earth), or the present, the past, or the future (Rescher, 1968, pp. 84-5).

An overview of concepts of time addressing the areas of culture and philosophy before dividing the debate between the sciences (of physics, biology and psychology) and humanities (aesthetics, art and language) is provided to contribute to and inform an exploration of temporality in the experience of music.

2.2 Culture

In a reflection of Marshall McLuhan's notion of a global village (1995, p. 126), twentieth-century Western musicians have looked to musical characteristics from beyond the West. This is evident in examples of Oriental culture – customs, civilization and achievement – having been embraced by the culture of the Occident. The trend of cross-cultural fertilisation which increasingly characterised approaches to music-making in the twentieth century gained momentum as the century progressed. Commencing with an interest, for example, in the assimilation of syncopation (in the compositions of Igor Stravinsky), features of music from further afield have been assimilated by musicians, composers and improvisers alike. Notable figures among composers include John Cage and Philip Glass: Cage for his

adoption of the philosophies associated with Zen Buddhism, and Glass for his study of Indian music (Cage, 1973, p. 93; Glass, 1988, p. 17).

At the close of the twentieth century, an increasing aesthetic and commercial interest in 'World Music' (reflected in the success of the UK's WOMAD festivals) signifies an intercultural acceptance of worldwide heritage and its produce. This trend is found among the work of arthouse and popular musicians alike, and brings with it multifaceted aspects of societies outside the Western hemisphere.

In the West, as the musicologist Jonathan Kramer has observed, a substantial amount of music is dominated by progress towards goals of completion, (1988, p. 25). An example, cited by Kramer, of this teleological characteristic, is the tendency of diatonic music to 'find harmonic completion represented through events of tension while journeying away from the tonic, completed by a return to it' (1988, p. 44). A cultural basis for goal-oriented temporality in Western civilization is located in religious ideology: as J.B. Priestley points out in his evaluation of early Christian teachings, '[t]ime was switched on at the creation, to be switched off sooner or later...' Priestley goes on to tell us that what 'vanished with the final triumph of Christianity was the idea of cyclical Time and recurrence', citing Saint Augustine's condemnation of cyclical time as undermining Christian faith (Priestley, 1964, p. 157). In Johannes Witt-Hansen's appraisal of Augustine's writings, time without end (non-teleological time) is the reward for those observing goal-oriented time (teleological time):

Saint Augustine's conception of a unidirectional and irreversible course of history and time is rooted in the idea of a state of eternal happiness, guaranteed to those who avoid the circuitous routes, whatever they are, and who follow the 'straight path of sound doctrine'. Such a conception implies that, even if there is in God's mind a definite pattern of causation, it does not follow that nothing is left to the free choice of the will. Translated into modern jargon, it would seem to mean that the choice of definite social initial states, which bring definite laws into action, is left to those, namely the Christians, who are aware of the pattern. Since the future of human beings in the last analysis is a matter of choice, no course of events is inevitable. Saint Augustine protests vigorously against the view that the happiness held out in

prospect to those who are redeemed should come to an end. There is no presentiment of a final state of decay, death, and general disorder, no end of time. (Witt-Hansen, 1977, p. 245)

Western cultural views founded in a religious belief in teleology find precedence in Greek civilization: Roger Scruton compares the eternal order inferred by an understanding of mathematics (an atemporal phenomenon), to the order inferred by music:

When understanding mathematics we have access to the order of creation, and this order is eternal, like the numbers themselves. In music we know through experience, and in time, what is also revealed to the intellect as outside time and change. Just as time is, for Plato and Plotinus, the moving image of eternity, so is the experience of music the revelation in time of the eternal order. The beauty of music is the beauty of the world itself, revealed to the sense of hearing - a 'point of intersection of the timeless with time'. (1997, p. 64)

The contrasting perspectives of temporality addressed by Witt-Hansen and Scruton respectively show that for some (such as Augustine), the passage of time has been interpreted as a moral issue, while for others (such as Plato), time's passage has been a subject for objective interpretation. These perspectives have contributed to the development of European culture, with its attendant geophysical characteristics. Comparisons with cultures occupying other spaces on the planet (in contrast to other historical times) portray variations in temporal interpretation: in one instance, perceptions of goal-oriented time have had limited social recognition.

Comparative cultural temporalities are described by the anthropologist Edward Hall, whose book The Dance of Life: The Other Dimension of Time recounts his findings regarding indigenous cultures of North America (1984). Hall's description of local attitudes towards the completion of housing illustrates the difference between goal-oriented activity and the absence of goal-perception (1984, p. 13). A further study, quoted by McLuhan to illustrate aspects of literacy related to agricultural practice in Africa, reveals the extent to which a familiarity with media focuses an

audience on a particular set of semiotic imagery, conveying relative perceptions of passing events (McLuhan.1995, pp. 131-2). The description of those untrained in the language of a specific media illustrates Ernst Gombrich's view of the absence of the 'innocent eye', (in the case of this study, the 'innocent ear') or the necessity to have knowledge of a language in order to facilitate interpretation of message content (1977, pp. 311-312).

Metric conventions arising from developments in European devotional music have been found to contrast with those of non-Christian cultures. Clifford Geertz, referring to the Balinese calendar, pinpoints the issue when he refers to research suggesting the calendars of other cultures describe, not the teleological nature of temporality, but the subjective nature of it: 'The cycles and supercycles are endless, unanchored, uncountable, and, their internal order has no significance, without climax. They do not accumulate, they do not build, and they are not consumed. They don't tell you what time it is; they tell you what kind of time it is' (1973, p. 393).

In describing a deep involvement in musical experience, Kramer refers to Hall's categorisation of 'kinds of time', specifically that of 'sacred' time (Kramer, 1988, p. 17). Hall's evaluation of cultural temporal representation provides a list of categories, each reflecting observed individual and social characteristics (see Table 1).

Table 1: Hall's categories of time

<ul style="list-style-type: none">• Biological• Personal• Physical• Metaphysical• Micro• Sync• Sacred• Profane• Meta• Monochronic time• Polychronic time
--

Source: 'How many kinds of time?' (Hall. 1984, p. 13)

It is clear from Hall's 'kinds of time' that temporality within a single culture may have a variety of faces. When this is considered in the wider context of two or more cultures, it is equally clear that, while certain kinds of time (such as 'biological') may share common prevalence, monochronic time, such as teleological time, may have more significance for the indigenous culture of Northern Europe than for the indigenous culture of Northern America.

The following examples of temporal concepts are from a variety of cultures assimilated into the global village. Taking rhythm as an example of 'micro'-time, the following statement emphasises a fundamental intercultural perception of time as movement:

Schacter [...] speaking in a context close to that of Schenker, refers to rhythm as organised movement in time. He notes that the word stems from the Greek verb meaning to flow, that the word stream stems from the same Indo-European source, that the experience of time as movement is deeply embedded in the imagery of our culture. (Epstein, 1995, p. 28)

Differences in how time is perceived between cultures is emphasised by Glass, in his definition of contrasting temporal structuring:

I would explain the difference between the use of rhythm in Western and Indian music in the following way: In Western music we divide time as if you were to take a length of time and slice it the way you slice a loaf of bread. In Indian music (and all non-Western music with which I am familiar), you take small units, or "beats", and string them together to make up larger time values. (1988, p. 17)

Further contrasting views of temporality illustrate cultural differentiation between temporal appraisals. Balinese culture has fuelled a Western interest in Gamelan since Debussy's visit to the 1889 Paris Exhibition. Cultural perceptions of time in Bali have been commented on by both Geertz (1973) and Kramer (1988). The views of Geertz have been referred to above, while Kramer tells us: 'Balinese time exhibits a circular quality: primary cycles repeat after 5, 6, 7, 30 (5x6), 35 (5x7),

42(6x7), and 210 (5x6x7) days' (Kramer, 1988, p. 24). Chinese temporality, arguably, is less well documented in the West, although the following description is supplied by Jakobson:

In classical Chinese poetry, syllables with modulations (in Chinese tse, 'deflected tones') are opposed to the nonmodulated syllables (p'ing, 'level tones'), but apparently a chronemic principle underlies this opposition, as was suspected by Polivanov and keenly interpreted by Wang Li; in Chinese metrical tradition the level tones prove to be opposed to the deflected ones as long tonal peaks of syllables to short ones, so that verse is based on the opposition of length and shortness. (Jakobson 1988, p. 41)

Comparisons to be made here with Western conventions of symmetry (for example, in the use of iambic pentameter) might start with a common application of metric convention. The 'otherness' of different cultures, however, is apparent in Cage's description of the 'cliché' which suggests music is continuous, while it is 'we who turn away' (Duckworth. 1995, p. 14). In Sonatas and Interludes for Prepared Piano (1946-8), Cage attempts to express the theory of nine permanent emotions, brought to the composer's attention having focussed on Hindu aesthetics after reading the works of Ananda K. Coomaraswamy: 'There were the 'white' emotions (the heroic, the erotic, the mirthful, and the wondrous) and the 'black' ones (fear, anger, sorrow, and disgust) with tranquillity at the centre, to which the others all tended' (David Revill, 1999, p.3). If one considers Cage's efforts to express Oriental theory in his music in relation to Stravinsky's assertion (frequently referenced as an antidote to Occidental romanticism) that music is 'powerless to express anything at all', the attraction of assimilating ideas from external cultures to revitalize the artform is apparent. While Stravinsky is quoted to highlight the course of musical development and to emphasize the attraction of assimilating ideas, the composer goes on to make a transcultural assertion pertinent to the focus of this investigation: 'I consider that music is, by its very nature, essentially powerless to *express* anything at all, whether a feeling, an attitude of mind, a psychological mood, a phenomenon of nature, etc. ... The phenomenon of music is given to us with the

sole purpose of establishing an order in things, including, and particularly, the coordination between *man* and *time*' (Griffiths, 1994, p. 63).

To conclude this survey of temporal concepts from a cultural perspective, it is clear that common concepts of time coexist with differing interpretations of the nature of its movement are found in cultures of the global village. The concept of time as movement is prevalent, and therefore a 'universal'. The perceived nature of temporal movement as either cyclic or goal-oriented depends on locale. It is possible to appraise differences in temporal perception between cultures as either those which are based upon values of event order or values given to the perceived character of the event. Reflections on differing cultural perceptions of temporality suggest the value of regarding time as a phenomenon divisible into two categories of perception: local and global, individual and communal, subjective and objective. These dualities provide evidence for a dialogical perspective; that is, a view formed as the result of defining two polarities. Alternatively, dual perspectives provide evidence to support C.P. Snow's 'Two Cultures' - that of the sciences and that of the humanities - in the appraisal of temporal perceptions. The incorporation of inherited values of one culture by another, and the resulting impact on perceptions leading to stylistic development remains to be discussed (see chapter 3).

Cultural perspectives of temporality have been shown to portray duality, but for the individual, in Hall's description at least, time has more than two categories:

As people do quite different things (write books, play, schedule activities, travel, get hungry, sleep, dream, meditate, and perform ceremonies), they unconsciously and sometimes consciously express and participate in different categories of time. For example, there is sacred and profane time as well as physical and metaphysical time. (Hall, 1984, p.13.)

Differences between sacred and profane categories of time are informed using cultural values. Differences between physical and metaphysical categories of time, however, necessitate a vocabulary benefiting from the study of philosophical values.

2.3 *Philosophy*

The written body of work addressing time, according to Hall, 'epitomizes Western thinking', providing a 'case study of Western thought' (Hall 1984, p. 8). The Western thought inherent in Rescher's description of multiple temporalities, referring to the nature of propositions as being atemporal (mathematical), transtemporal (a statement of fact), or regarding the present, the past, or the future (teleological observation), supports Hall's statement (Rescher, 1968, pp. 84-5). A scholarly heritage dedicated to the exploration of temporal issues has been contributed to by Western philosophers since the time of Augustine. A recurring aspect of the perceived passage of time among commentators is duality, evident in Augustine's question: 'What then is time? If no-one asks me, I know; if I want to explain it to a questioner, I do not know.' (Priestley, 1964, p. 158.) This duality is characterised by the subjective and the objective; the individual and the public. Multiplicity is clearly present in Rescher's description of propositions. A single duality is inferred in Hall's reference to physical and metaphysical time: the Time of physical laws and the Time of theoretical being.

The continuing study and debate of metaphysical temporal issues is evident in The Study of Time, the tenth volume of which was published in 2001, edited by Julius Thomas Fraser and Marlene Pilarcik Soulsby. In this forum for Western thought, music has been identified as a catalyst which 'urges us to consider issues of time and process because it so clearly presents itself to us in passage and because it so strongly resists representations that would allow us to step outside its unfolding and observe it from the timeless perspective of structure' (Hasty, 2001, p. 107). The number of terms defining aspects of temporal perception, from the physical to the metaphysical ('issues of time and process'; 'in passage'; 'representation'; 'unfolding'; and the 'timeless perspective of structure'), serves as a reminder of perceived temporal qualities.

One issue of process in time is characterised by the complementary poles of the macrocosm of Western thought and the microcosm of the individual (sharing the common ground of temporal procession). Characteristics of the microcosm of the individual have been evaluated by Bertrand Russell, who writes of the necessity for an 'agreed public temporality': 'our feeling of duration or of the lapse of time is notoriously an unsafe guide as to the time that has elapsed by the clock' (Russell,

1967, p.16.). Heidegger, approaching the subject using the esoteric figure of 'Dasein', confirms that when a public temporality is in place '[o]ne directs oneself according to it, so that it must somehow be the sort of thing which Everyman can come across. (1995, p. 464.) Allusions to Snow's two cultures include the subjective culture of the individual and an objective culture of 'agreed public temporality': the 'micro-culture' of the subjective complements the 'macro-culture' of the objective.

The perception of time's passage is explored by J. R. Lucas when he considers the difficulties of agreeing more than simply the process of time:

The discrepancy between public and private time and the consequent urge to talk paradoxically about time going fast or time going slow both arise from the fact that while we each experience time as an amount - a magnitude - all that we can always agree about is an order. [...] We have no naturally given intersubjective experience of the amount of time elapsing, but because of our subjective experience of it, we are sure that intervals of time do have magnitudes, and therefore insist that the question how much? shall be askable of public time as well as of private. (Lucas, 1976, p. 16.)

Temporal experience as the representation of a religious journey has been observed to underpin Augustine's views (Witt-Hansen, 1977, p. 245). Discussing the concept of the ever-shrinking present, Lucas points out the possibilities of finding ourselves forced to the conclusion that time is unreal because of the brevity of the interval suggested by the term 'present' (Lucas. 1976, pp. 22-3). Evidence supporting an argument to deny the passage of time has been provided by McTaggart's negative thesis of temporal facts. This states that while there is a past, present and future, an event exists in the past, present and future simultaneously, representing a vicious circle of infinite regress (1968, p. 65).

The theory of species-specific temporalities offers an alternative method for the analysis of temporal characteristics. Observations in the field of biology have led to the formulation of a philosophy of species-specific worlds, or *Umwelts*.⁸ Kramer's development of *umwelt* theory links temporalities with musical exploration, representing an aspect of philosophy influencing analytic theory applied to music (see appendix 5). According to *umwelt* theory, a specific temporality, such as the

nootemporal, may be represented by music with a linear, teleological character. This nootemporal level, according to the hierarchical theory proposed, includes defining characteristics of other hierarchies, such as the prototemporal, which has been defined as having temporal characteristics appropriate to moment form music (Kramer, 1985, p. 395).ⁱⁱⁱ

Philosophical perspectives of the interpretation of historical data serve as a reminder that interpretation is bound to the subject of inquiry. Heidegger's assertion that a hermeneutic circle will effect the findings of a given line of research - 'its fore-having, fore-sight, and its fore-conception' (1995, p. 275) - is echoed in Epstein's appraisal of 'three or four analytical perspectives [which] have characterized the existing literature' (1979, p. 6). These perspectives, identified by Epstein as tools with which to pursue musicological analyses, are described as the historical-stylistic approach; the formal-descriptive approach; the system developed by Schenker; and Schoenberg's theories regarding a Grundgestalt (Epstein, 1979, p. 6). In language similar to definitions of a hermeneutic circle, Epstein reminds us 'the results of analysis will in part be determined by the assumptions and the frame of reference shaping the inquiry itself' (1979, p. 6). The analytic approach of the investigation is therefore expected to govern aspects of the conclusion.

To conclude this overview of temporal issues from the perspective of philosophy, attention is drawn to Russell's summing up of Descartes' 'Cogito', which stipulate the various criteria observed by Descartes to achieve 'a firm basis for his philosophy' (Russell, 1961, p. 585-6). The concept of Cartesian doubt highlights two issues contributing to the survey. Firstly, empirical research suggests the Cogito denotes a duality the opposite pole of which is characterized by solipsism. Secondly, the Cartesian approach to the development of a system of analysis reflects a contribution to the widely-accepted method of modern Western thinking, whereby subjects of analysis are submitted to forms of measurement in order to provide 'conclusive' data, and in so doing validate objectivity.

2.4 Scientific method

The following overview of objective scientific method in relation to concepts of time focuses on methods of measurement. One aim of this focus is to establish what

tools may be available to quantify the temporal art. Quantifiable scientific evidence, connected to observations of the stars, has provided criteria of teleological and ontological progress for objective evaluation. Priestley's statement regarding planetary chronometric variance illustrates the effect of gravitational pull on local time: '[...] a clock running at a certain rate on earth would run slower on Jupiter and slower still on the Sun [...] a second of the sun's time would correspond to 1.000002 earth seconds' (Priestley, 1964, p. 93). In the overview of Western philosophy discussed above, an underlying premise emerged that subjects of inquiry should be evaluated through quantifiable processes with a qualitative analysis of conclusions. In describing 'intense psychic states', however, Henri Bergson pinpoints a problematic area for quantification, at which subjective terminology defies that of the objective. '[W]e are never so bold in judging the intensity of a psychic state as when the subjective aspect of the phenomenon is the only one to strike us, or when the external cause to which we refer it does not easily admit of measurement' (Bergson, 1910, pp. 4-5). Bergson's statement foregrounds the duality encountered when one attempts to objectify the subjective. Before addressing the problem of duality further, however, it is necessary to evaluate the objective perspective underpinned by scientific method afforded by physics. Cartesian doubt shows that the employment of consistent criteria for evaluation provides a firm basis for analysis. A tenet of the Cogito is falsifiability, 'the criterion of demarcation between science and non-science' (Magee, 1985, p. 43).

2.4.1 The laws of thermodynamics

According to the laws of thermodynamics, Stephen Hawking tells us in A Brief History of Time (1988), universal truths regarding information and entropy ratios are a fundamental part of the functioning of our universe. In his evaluation of factors governing physical (thermodynamic) time and psychological time, Hawking posits 'at least three' arrows of time, and argues 'that the psychological arrow is determined by the thermodynamic arrow, and that these two arrows necessarily always point in the same direction' (1988, p. 145). One effect of the thermodynamic arrow of time, according to Hawking, is an increase in entropy (with a comparative reduction in order) during time's passage. The passing of time, therefore, forms a fundamental aspect of physical existence.

To explain universal laws, Hawking states it is necessary to allow for 'imaginary' time - a theoretical time in which 'one ought to be able to turn round and go backward' (1988, p. 143). Hawking points out that 'imaginary time' contributes to a situation in which the laws of science 'do not distinguish between the past and the future' (1988, pp.143-4). In describing the background to imaginary time (in the emergence of a theory of relativity) Hawking stipulates that 'one had to abandon the idea that there was a unique absolute time [...] [t]hus time became a more personal concept, relative to the observer who measured it' (1988, p. 143).

The laws described by Hawking aid an understanding of time's unfolding process in addition to providing an underpinning argument for time as a subject of individual perception. With what tools can this unfolding, or these perceptions, be measured?

2.4.2 Units of temporal measurement

A review of units of temporal measurement includes the development of clock systems. These clock systems fall into families classified by Fraser as cosmological, physiological, mechanical and nuclear (Fraser, 1982, p. 175). Victor Zuckerkandl relates astrological systems to those developed more recently, and which depend upon time-keeping methods increasingly removed from observing planetary movement: 'Time - presumably we first think of hours, minutes, seconds. What is an hour? One twenty-fourth of the period that elapses while the earth revolves once on its axis. Minutes and seconds are correspondingly lesser fractions of this period, the minute $1/1440$ of it, the second $1/86,400$ ' (Zuckerkandl, 1956, p. 153).

Measurements of time's passage based on the movement of stars and our planet's relationship to them has provided calendars based upon the lunar month, which subdivides the solar year. The subdivisional increments of the month move steadily in the direction of human cognisance, until the divisions are so finite that an atomic clock is necessary to define a second.

Using the model described by Fraser, temporal measurement is determined by Earthly and Tabulated cycles, based upon physiological, astronomic, and atomic timekeepers (see appendix 1). Observations by Fraser include a comparison between the 'empirical evidence' afforded by clock readings, and the 'exercise of the imagination' based in the laws of nature (1982). Reference is made to three families

of clock - Astronomic, Physiological, and Atomic. In discussing the principle of temporal levels, a description is made of the functional life-cycle of an animal as being an 'information carrying loop', and von Uexküll's theory of Umwelts is introduced. Concluding his book, Fraser refers again to the 'hierarchical organization of nature' and that 'level-specific laws must necessarily change from one level of complexity to different levels of complexity', observing that in the course of evolution 'unpredictably new structures and processes governed by new, stable principles' arise upon each organizational level.

Measurement based upon planetary movement has been affirmed by Heidegger (he refers to the day as the 'most natural' measure of time) and concludes '[t]emporality is the reason for the clock' (1995, pp. 465-6). Epstein, observing that the body is a form of clock in addition to a list similar to Fraser's (astrological, cosmological, mechanical, nuclear, and psychological clocks), adds to the variety of timekeepers (1995, p. 138). Might musical temporality be added to these timekeepers, or does it belong to clocks of the psychological family?

An additional musical clock is illustrated in a hypothetical example: two ensembles (given appropriate information) can play the same piece which may differ in absolute time lengths, but have enough prerequisite events, to use Fraser's definition, 'comprising a local coincidence of two instants' complete with the score providing a 'rule of transformation'. Music adds its own clock to the astronomic, physiological and atomic families, measuring a time independent of public time and in addition to the subjective time of the individual. The musical clock is supported by Fraser's explanation that temporality is biologically linked to a given species. Fraser's rule of transformation stipulates criteria by which passing time may be defined using psychological perceptions.

The multidisciplinary interpretation of perceived temporal movement is demonstrated in the work of Eadweard Muybridge, 'the first man to think of a photo-finish in horse-racing' (Gernsheim and Gernsheim, 1965, p.155). Using a series of cameras, Weybridge produced Animal Locomotion (1887), a study of animal movement enhanced by the capture of temporal durations lasting 1/100,000 of a second (Gernsheim and Gernsheim.1965, p.158). With the work exemplified by Weybridge the inclusion of an aesthetic value in temporal measurement emerges

characterised by the suspension of time. (See appendix 14: Hierarchy, plasticity and form. figure 22. Eadward Weybridge. Galloping horse, 1883-85.)

Physical objectivity and aesthetic subjectivity is further highlighted in Helmholtz's On the Sensations of Tone as a Physiological basis for the Theory of Music (1954). This investigation into musical phenomena within a context of 'esthetic awareness' (Helmholtz.1954, p. 5) is subsequent to the apocryphal story of Pythagoras hearing metal bars of differing lengths producing variations in pitch. The precedent of scientific study of musical phenomena set by Helmholtz's investigation is reflected in a description of structure by the author:

In these first two Parts of the book, no attention is paid to esthetic considerations. Natural phenomena obeying a blind necessity, are alone treated. The Third Part treats of the construction of musical scales and notes. Here we come at once upon esthetic ground, and the differences of national and individual tastes begin to appear. Modern music has especially developed the principle of tonality, which connects all the tones in a piece of music by their relationship to one chief tone, called the tonic. On admitting this principle, the results of the preceding investigations furnish a method of constructing our modern musical scales and modes, from which all arbitrary assumption is excluded. (1954, p. 5)

Helmholtz's study emphasises a move towards objectivity in music-making that underpins the later drive to minimalism. Research into vibrations emphasised by the development and use of the mid-twentieth-century synthesizer can be seen to have started in earnest with the investigations of Helmholtz. Edgard Varèse, champion of electronically-produced music, illustrates music's changing relationship to the sciences:

The philosophers of the Middle Ages separated the liberal arts into two branches: the *trivium*, or the Arts of Reason as applied to language - grammar, rhetoric and dialectic - and the *quadrivium*, or the Arts of Pure Reason, which today we would call the Sciences, and among which music has its place in the company of mathematics, geometry and astronomy.

Today, music is more apt to be related to the arts of the *trivium*. At least, it seems to me that too much emphasis is placed on what might be called the grammar of music. At different times and different places music has been considered either as an Art or as a Science. In reality music partakes of both. (Varèse. 1939, quoted in Schwartz and Childs. 1998, p.198)

The view that music has no meaning or language other than its own, despite messages of text, social, or political alignment, is challenged by the idea that a musician-composer is a mechanic or engineer of time and its relevant implication that music is a language of time.

2.5 Biology

Implications of biological factors in the evaluation of time have been introduced above: biological characteristics dictating our species' appraisal of temporality are foregrounded by noting the temporal characteristics of other species, the focus of Jakob von Uexküll's article 'A Stroll Through the World of Animals and Men' (Schiller. 1957). The consideration of biologically-based modes of measurement is necessary in order to establish a background to umwelt theory, based on the definition of a species-specific universe, to which Fraser has referred (1982, p. 19). Von Uexküll has specified temporalities for given species, as the following statement shows:

In the snail's world a rod that oscillates four times per second has become stationary. We may infer from this that the snail's receptor time moves at a tempo of three to four moments per second. As a result, all motor processes in the snail's world occur much faster than in ours. Nor do its own motions seem slower to the snail than ours do to us. (Schiller. 1957, p. 31)

Taking von Uexküll's model, the *Homo Sapiens* umwelt is defined by the range of biological parameters available which necessarily dictate subjective temporal senses, and therefore any psychological, aesthetic, or philosophical considerations regarding the passage of time. Time is 'the product of a subject', and

a human moment may differ from the moment of another species (Schiller. 1957, p. 29):

Karl Ernst von Baer has made it clear that time is the product of a subject. Time as a succession of moments varies from one Umwelt to another, according to the number of moments experienced by different subjects within the same span of time. A moment is the smallest indivisible time vessel, for it is the expression of an indivisible elementary sensation, the so-called moment sign. As already stated, the duration of a human moment amounts to of a second. Furthermore, the moment is identical for all sense modalities, since all sensations are accompanied by the same moment sign. The human ear does not discriminate eighteen air vibrations in one second, but hears them as one sound. It has been found that eighteen taps applied to the skin within one second are felt as even pressure. (Schiller. 1957, p. 29)

The conceptual present (Fraisse. 1982; Epstein. 1995), reflects a view of temporality inevitably entwined with the biological perceptions available to *Homo Sapiens*. Appraisal of psychological phenomena based on biology has revealed possible origins of rhythmic orientation. Fraisse tells us research has revealed 'the earliest detected rhythmic patterns of humans to be found in the sucking of newborn infants' (1982). Fraisse's conclusions describe the perceptual present as depending upon shortest intervals consisting of durations less than 400 msec. (The Psychology of Music. 1999, p. 475).

Biological characteristics dictate cognisance according to the functions of the brain. Fraisse has suggested the medulla may determine the tempo of walking, pointing out that there may be additional contributing factors from functions such as heartbeat and 'the electrical oscillations of the cerebral cortex' (1982, p. 152). Elsewhere, the left and right hemispheres of the brain have been attributed with specific perceptive parameters: Kramer lists a number of perceptive characteristics, and suggests the left hemisphere deals with the teleological perception of temporality (1988, p. 63). (Appendix 10 illustrates suggested attributes of left and right hemispheres.) Kramer suggests the analytic left brain considers linear music, while the holistic right brain interprets vertical music (1988, p. 387). Similarities

between characteristics of the left and right hemispheres of the neo-cortex, and the values promoted by cultures from specific areas of the globe, are linked, according to Kramer.

The study of the brain is an area of continuous development: 80 per cent of our knowledge about the brain has been accumulated in the last fifteen years (Smith. 1996, p. 13). Particular locations of the brain - the neo-cortex, limbic system, and reptilian areas (constituting three elements of the triune brain) - have been designated as dealing with specific perceptive skills, emotional and value recognition, and survival attributes. These attributes, in addition to the descriptions offered by Kramer, have informed pedagogical approaches (such as those of Jean Piaget (1996, p. 14)). Kramer, Piaget, (and later Fripp), have used left- and right-brain thinking to develop approaches in their respective fields of analysis, pedagogy and musical training. According to this interpretation, the left brain aids understanding of the temporal, while the right brain aids understanding of the atemporal.

2.6 *Psychology*

'Art being a thing of the mind, it follows that any scientific study of art will be psychology. It may be other things as well, but psychology it will always be' (Friedlander. 1946, p. 128; quoted in Gombrich. 1977). Gombrich's reference serves to inform the development of multiple styles of the 1900s, in addition to the fine art discipline in which it is based. The adoption of interdisciplinary awareness is a characteristic of twentieth-century post-modernism, reflecting the disintegration of metanarrative as the hegemonic position of classics of modernism has come to be replaced by heterogeneity (Jameson, 2000, p. 350) and providing artists such as Cage with the desire to convey the suggestion that 'music is sounds, sounds around us whether we're in or out of concert halls' (quoted by Trevor Wishart, 1998, p. 5). In the 'Artful Brain', Ramachandran has described aesthetic appreciation as mainly culture-based, with a 10 per cent factor of psychological response supplying the explanation for attraction to abstract forms (again based on biological survival functions). (See appendix 11.)

The psychological present is dependent on the perceptual present discussed above. To evaluate the passing of time, one method is to measure between two points. That these points will themselves have a duration suggests a starting point for an evaluation of temporal perception. While measurement between two points may be guided by two stimuli under controlled conditions, within a context of musical interpretation, events operating as stimuli may be seen to depend upon psychological interpretation of the subject. If music omits linear, narrative development, and represents instead a 'constant now'-how long is now? Fraisse suggests the psychological now within aesthetic frameworks of music and poetry are larger than the perceptual present of 400 msec referred to above: 'Fraisse [...] points out that the average length of a musical bar in religious hymns is 3.4 sec. The average duration of a line of poetry is 2.7 sec' (Epstein.1995, pp. 510-511). Problems of object perception have been commented on by Sloboda, questioning 'the degree to which psychological evidence confirms their reality' (1985, p.11) and elsewhere by Lucas, who emphasises shared public agreement of sequential order in conjunction with private subjective views of durational magnitude (Lucas. 1976, p.16). Although private subjective duration presents measurement problems, relative amounts can be publicly agreed. This premise validates Brian Eno's description of a 'long now': 'The longer your sense of Now, the more past and future it includes. It's ironic that, at a time when humankind is at a peak of its technical powers, able to create huge global changes that will echo down the centuries, most of our social systems seem geared to increasingly *short* nows' (<<http://www.longnow.org/thebighereandlongnow>>).

We may interpret events marking the beginning and end of 'now' as stimuli. That these stimuli form an order is a prime concern with the recording and perception of passing time. The perceptions of pattern among stimuli include issues of psychology and subsequently judgements of value, impacting upon aesthetic awareness. It is the beholder's aesthetic awareness to which Doob refers when he writes 'what matters is that contemplation is the consequence of perceiving the pattern of stimuli' (1971, p.372). The interpretation of patterns of stimuli recalls the 'beholder's share' of Gombrich (1977, pp. 154-244). Gombrich, having discussed aspects of representation and meanings derived from two-dimensional representation, extends his survey to include aspects of abstract art:

Even non-objective art derives some of its meaning and effects from the habits and mental sets we acquired in learning to read representations. Indeed, we have seen that any three-dimensional shape on the canvas would be illegible or, which is the same, infinitely ambiguous without some assumptions of probabilities that we must bring to it and test against it (1977, p. 243).

The testing of patterns as a psychological exercise can be facilitated with the use of a model: If the primary model is goal-oriented, this would reflect characteristics of the analytical processes of the left-brain. The predominant musical output of the West may be interpreted as reflecting a goal-oriented approach. The goals of resolution represented in diatonic music originating in a move away from the tonic may similarly be interpreted in terms of teleological progress. The manner in which the psychological impact of events is remembered (of which each may be defined by differing patterns of stimuli) has been referred to as Markov chain. Kramer states that a Markov chain contributes to an awareness of structural relationships. The following definition is given:

Markov chain, series in which each event is understood in relation to preceding events: in a first-order Markov chain, each event is considered in relation to the one preceding event; in a second-order Markov chain, each event is understood in relation to the two preceding events; in a zeroth-order Markov chain, each event is independent of preceding other events. (Kramer. 1988, p. 453)

The role of memory in temporal perception may be interpreted from the point of view of a Markov chain, wherein the imagery conjured up by J. W. Dunne may be assigned numeric degrees or orders (Dunne. An Experiment with Time. 1934). Research into the psychology of hearing has highlighted the issue of the 'competence of the listener' and the lack of audible information informing the listener of compositional criteria: 'The conceived order does not engender the perceived order' (Dufrenne. 1979, pp.115-121).

This overview of temporality from a psychological perspective has foregrounded pattern-perception, agreed sequential order, the application of models with which to compare perceived patterns, and the memory chain.

2.7 Aesthetic values

In appraising aesthetic consideration of temporality in relation to artworks, three temporal frames of reference are referred to by Doob: the historic, the formal, and the creative (1971, pp. 377-9). The historic frame refers to the time taken to create the artwork; the formal may be interpreted as the perceived temporal interval of the work; the creative may be judged as the interval 'portrayed in the art itself' (1971, p. 379). Doob suggests any art form can tamper with the perceived passage of time (1971, p. 382), and suggests, in language reminiscent of Hegel, that time can be overcome by art: 'Any event, whether it be a riot or a simple human face, is so complicated, contains so many different elements and shades, that it can never be completely recorded. But its essence, the critical pattern or combination, can be captured, and that is art: time is overcome by being rather than becoming' (Doob. 1971, p. 375).

Teleological models of reference concern themselves with becoming rather than being, whereas it is a contention of this survey that it is a characteristic of music to evoke a time of 'being'. Two views are quoted here to respectively advise caution in the search for 'musical meaning', and to support non-teleological temporality. Firstly, Copland's opinion ('The precise meaning of music is a question that should never have been asked, and in any event will never elicit a precise answer' (1952, p. 13)), points to a validity in evaluating characteristics of music rather than attempting to define some kind of musical quintessence. Secondly, Kramer aligns musical meanings with temporality:

The meanings of music are temporal owing to music's unique ability to create different kinds of time, often simultaneously, which resonate with the nonlinearity (and linearity) of our inner thought processes as well as with the linearity (and nonlinearity) of our external lives in society. Through time, music's meanings become both internal (syntactical) and external (symbolic). (Kramer. 1988, p.15)

The achievement of the object of music through the use of harmonic, melodic or rhythmic manipulation depend upon the historical context of a given musical form. Roger Scruton's description of goal-oriented chordal movement in Western European music (supplied here to provide context) includes references to relationships between harmony, rhythm, and melody:

Chords are spaced, open, filed, or hollow. They spread over the stave, strain asunder, tend away from or towards their neighbours. They provide the primary experience of a spatial (as opposed to a temporal) Gestalt in music: of a unity which crosses distances, and can be grasped all at once. And like melodies, they are objects of musical, rather than merely acoustical, perception. (1997, p. 70)

In describing a three stage development of music (to underpin analysis methods for electronically-produced sound), H. H. Stuckenschmidt alludes to practical methods of provision and their incorporation into the process of music-making:

Thus music enters its Third Stage. The first was restricted; the music was written to be performed principally by the human voice, and as is the voice, it was limited in its range of expression...The second was the instrumental stage...The third, the electronic stage, retains human participation in the compositional process, but excludes it from the means of realisation. (1965, p. 13)

The argument as to what may or may not constitute music has continued to be fuelled by observations promoting a universal acceptance of sound, whether it be folk tunes or knives and forks (Cage, 1978, p. 81), compared with those who refer to phrase and harmony as the 'phenomena which create the musical experience' (Scruton, 1997, p. 72). Suzanne Langer reminds us of the position held by music as a conceptual art: 'The assumption that music is a kind of language, not of the here-

and-now, but of genuine conceptual content, is widely entertained, though perhaps not as universally as the emotive-symptom theory' (1963, p. 219).

Musical characteristics, originating in the manifestation of cosmic forces, have been observed since the time of Pythagoras, as Jamie James observes in The Music of The Spheres: '[m]usic and science begin at the same point, where civilization itself begins, and standing at the source is the quasi-mythical figure of Pythagoras' (1995, p. 20). The apocryphal story of the discovery of the harmonic series as the result of Boethius hearing differences in pitch emanating from a brazier's workshop may be seen as one of the first of a series of research discoveries revealing relationships between frequency and auditory experience (James. 1995, p. 35). Tristram Carey, in his Illustrated Compendium of Musical Technology, notes that in 1939, because of an increasingly mobile and technological global community, the world agreed on a frequency of 440 Hz for the pitch of A 'before it disagreed about everything else' (1992, p. 1).

The representation of concepts of deity, emotion and moral standpoints from music around the world has been commented upon by Leonard Meyer, who stipulates tempo, pitch, rhythm and mode as tools to express musical symbolism (1970, p. 2). Langer has commented on the powers of music to effect the listener: 'The legend of the sirens is based on a belief in the narcotic and toxic effect of music, as also the story of Terpander's preventing civil war in Sparta, or of the Danish King Eric, who committed murder as a result of a harpist's deliberate experiment in mood-production (Langer. 1963, pp. 211-2).

Langer's description of mood-production is a reference to the modal system which predates the diatonic system of scales in Western music. In the modal system, vestiges of which may be found in the character of today's major (Ionian) and minor (Aeolian) scales, a specific group of notes is seen to represent human emotional characteristics such as aggression or pacification.

The primary function of music as a provider of social communication finds evidence in the examples of music from cultures around the world. While much has been written about Western music reflecting a culture of high art, there has been an increasing interest in low art musics, frequently composed, performed, and received without formal recording, notation or documentation. The study of ethnomusicology reflects this trend, and social reasons for the perennial popularity of low art music

apply now as in the past, as Andy Bennett attests in his evaluation of Popular Music and Youth Culture: '[...] in seeking to justify particular tastes in music and style on a more personal level, individuals invariably draw upon a range of locally embedded images, discourses and social sensibilities centred around the familiar, the accessible, the easily recognisable' (Bennett. 2000, p. 197). Bennett's appraisal relates to local interest among young people in the North of England in a genre of popular music, but the criteria within his statement has universal implications.

Bennett's evaluation denotes social and cultural hierarchies, while Doob applies the term 'hierarchy' in an aesthetic sense. A three-tier hierarchy of timeworlds, according to Doob (referred to above), may be applied to 'any work of art':

Time in any work of art [...] may be considered in three different frames of reference. There is the duration of the interval during which the artist created the art [...] The second kind of time in art, the actual duration of the interval as the audience perceives, understands, and reacts to the artistic communication [...] Of greatest significance is the third temporal factor, the interval actually portrayed in the art itself. (Doob. 1971, pp. 377-9)

A similarity to be found in the three worlds suggested by Doob, and those of Karl Popper, is the use by both analysts of models with which to evaluate the subjects of analysis. While the proposed content of each world contrast (Popper's worlds of material, subjectivity, and product, differ from Doob's worlds of history, form, and the creative), they nevertheless portray analogous similarities. Therefore, Doob's world of the formal reflects Popper's material world; the historic echoes the subjective; the world of 'not necessarily intentional' product, becomes analogous with the creative world.

Spatial interpretation of musical phenomena, such as Scruton's reference to the spatial characteristics of chords, provides an additional atemporal perspective for the appraisal of passing time in music.

2.8 *Selected arts*

Links between the arts and music are derived through a number of examples, and has been implicit in the aesthetic appraisal of music as an art form. The use of the term 'colour', as Theodor Adorno points out, reveals a relationship between music and the visual and spatial arts: 'Through sonority, time seems transfixed in space, and while as harmony 'fills' space, the notion of colour, for which musical theory has no better name, is directly borrowed from the realm of visual space' (1981, p. 63). Meyer has also referred to the representative power of music, stipulating 'the musical theory and practice of many different cultures in many different epochs indicates that music can and does convey referential meaning' (1970, p. 2).

The representation of an aesthetic concept of teleology has been observed in harmonic movement by Kramer: 'The temporal form of a tonal piece typically consists of a move towards a point of greatest tension that is usually remote from the tonic, followed by a drive back towards the tonic. The return of the tonic is an event of rhythmic importance, a structural downbeat, a point of resolution, the goal' (1988, p. 25).

The goal of resolution generally accepted as an organizational structure in tonal music, frequently without question, has implications for temporal representation in music. Comparison with other disciplines informs the implicit representational message of temporality in music. Eno, in discussing developments in cybernetics, has referred to static organizational structures requiring the use of a set of instructions by the addressee in order to reach a goal (1996, p. 342). Cybernetics serves to highlight differences between passive (static) stimuli (such as a photograph), and the kind of moving stimuli provided by musical performance. The algorithmic instruction required, according to Eno's interpretation of Stafford Beer's work, depends upon an heuristic approach in order for an adaptive organism to seek out an unknown goal (1996, p. 342).

The removal of goal-oriented teleological criteria from music poses problems for the musician wishing to emulate achievements in other media. The 'problem' of teleology in music is highlighted by Alexander Calder's development of the mobile. The effort of Earle Brown to interpret mobile form in the medium of music is a

conscious emulation of the aesthetic principles present in mobile sculptures. In mobile structures, the work remains the same, although the addressee's physical perspective changes. Michael Nyman highlights the interdisciplinary influence of contemporary artists on Brown: '[...] Brown's musical ideas were affected by the recent developments in the visual arts, especially the work of Jackson Pollock and Alexander Calder, for visual artists had created an environment which must have been encouraging innovation in the other arts' (Nyman. 1999, p. 51). Barbara Rose has pinpointed 1930, when Calder visited Mondrian's studio, as the date from which Calder became 'converted to both abstraction and movement' (1967, pp. 247-9).

Nyman goes on to describe the impact of sensibilities borrowed from the spatial arts on Brown's work as those of 'spontaneity and open-form mobility' (1999, p. 56). Brown is quoted as saying: 'The momentary resolution of this dichotomy ['found object' tradition v. personal conditions of control] seems to me to be the 'subject' (as distinct from the object) of today's art, common to all of the arts' (Nyman, 1999, p. 56).^{iv} While the minimalist movement shows signs of fracture and evolution,^v some of its concerns have had a lasting interdisciplinary appeal. One such characteristic is the ascendancy of the medium, compared to a decreased importance of representational content. The aesthetic highlighted by 'art as idea' is at variance with the more conventional view proposed by Herbert Read: 'The differences between a painter and a musician, between a poet and a sculptor, are absolute, and depend on a sensitiveness towards a particular medium which enables a special kind of man to become a special kind of artist' (1967, p. 107). While sensitivity towards a particular medium, according to Read, is a characteristic of the artist as technician, aspects of temporal perception among the arts reflect a unifying as opposed to a divisive function.

Brown, whose score for December 1952 is reputed to have been displayed at art exhibitions, explains his interest in painting: 'I used to envy painters very much because they had their work in their hands, so to speak. They could see it. When you've done it, it's in real form. Writing music you don't have the real thing. All you have are symbols' (Bailey, 1992, p. 62). (See appendix 14: Hierarchy, plasticity and form, figure 27. Brown, Earle. December 1952.) Similarities between Brown's score and Piet Mondrian's Broadway Boogie Woogie, in the use of horizontal and vertical lines, and reference to musical event, point to the stylistic development of

minimalism. (See appendix 14: Hierarchy, plasticity and form, figure 25. Mondrian, Piet. Broadway Boogie-woogie.) Each of the works referred to here has a relationship with music, either specific (in the case of Brown) or speculative (in the case of Mondrian).^{vi}

Contemplating the perspective afforded by the study of a detail (which will necessarily reflect its context), Donald Mitchell has posited that '[i]t is not altogether fanciful to suggest that one might be able to comment quite significantly on major developments in the C20th music by observing the history of the glissando alone' (1963). A further observation from Mitchell highlights the macrocosm of the arts:

The development of a new language in music has its parallel in the other arts. It is possible, perhaps to discern a pattern, faint and fragmentary though it may appear at the premature stage of excavation, which seems to lend to at least some of the most important arts a common background. What may be, possibly, only a segment of the pattern-but a highly interesting one-is the preoccupation of so much of the New, whether architecture, literature, painting, or music, with Time. Time, in fact, has swept into the foreground of twentieth-century art. Think of Joyce's *Ulysses*, of Proust's *Remembrance of Things Past*, in which quite new concepts of timeless Time are introduced into a literary form which had been a veritable bastion of narrative or chronological time. (Mitchell. 1963, p. 74)

The macrocosm of the art world, though too large for comprehensive appraisal in this investigation, will nevertheless find reflection in the microcosm of aspects of a twentieth-century music style. The reappraisal of temporality and the representation of time have been noted as a characteristic of twentieth-century aesthetics (Gleick. 1999. p. 7). Marcel Duchamp has been credited with providing the stimuli for a paradigm shift in the way art is perceived:

After Duchamp's *Readymade*, art was never the same again. With it, he reduced the creative act to a stunningly rudimentary level: to the single, intellectual, largely random decision to name this or that object or activity 'art'. Duchamp implied that art could exist outside the conventional 'hand-made'

media of painting and sculpture and beyond the considerations of taste; his point was that art related more to the artist's intentions than to anything he did with his hands or felt about beauty. Conception and meaning took precedence over plastic form, as did thought over sensuous experience and, in an instant, the 'alternative' tradition of twentieth-century avant-garde art was launched. In opposition to the increasingly abstract, 'formalist' tradition which his contemporaries - Picasso, Matisse, Mondrian and Malevich - were solidifying (art for art's sake), Duchamp posited his Readymades (art as idea), or what one writer has called 'his infinitely stimulating conviction that art can be made out of anything'. (Smith.1995, pp. 256-7)

The following comments from practitioners and analysts bear testament to the preoccupation of the 'new' with time: Jasper Johns has observed that Duchamp moved art 'past retinal boundaries...into a field where language, thought, and vision act upon one another' (Johns, 1968, p. 6, quoted by Rosenthal, 1989, p. 120). The interpretation of temporality in aspects of Western art works, according to Doob, operates from an historical perspective as supplying an 'ingredient of the future' (1971, p. 373). In a discussion of emergent performance theory, an awareness of relationships between the arrows of performance time and real time is suggested, with particular reference to the past supplying a form of security, while 'working in duration allows the exploration of risk' (Edwards. 1997, p. 18). The arrow of performance time bears a relationship with Langer's observations, who has described the special time sense created by music, as being a 'virtual time' (Kramer, 1988, p. 454). The manipulation of perceived temporal impact in cinema technology has included time-based effects such as 'bullet time', the cinematographical technique used to achieve slow-motion action effects in the science-fiction film 'The Matrix'. The impact on the manipulation of narrative attributable to the 'cut-up' method of William Burroughs has informed sensibilities of the disciplines of music (Laurie Anderson: 'Sharkey's Night') and theatre (Robert Wilson: 'The Black Rider').

Temporal aspects of music, however, constrain the narrative power of music because, whatever story may be unfolding within the music, the passing of clock time is an inescapable constant. While clock time passes for all narratives, whether they are supplied by oil on canvas, sculpted marble or the printed page, the nature

of vibrations in the air carries an intimacy with temporality which other arts, even performance art, only approximate.

The relationship between performance and the delivery of an art work has been addressed by Doob's frames of reference: how much of a 'performance' is present in the paintings of Mondrian and Brown, compared to performances evident on the stage of the concert hall? The link between temporality and performance has been evolved by the introduction of a hyperreality of time represented by developments in recording, and particularly digital technologies. In discussing aspects of the 'betwixt and between' of liminal performance, an observation made by Simon Reynolds is quoted: 'what a record documents is not an event but a phantasm constructed out of different takes. It never happened' (Reynolds. 1990, p. 166 in Broadhurst, 1999, p. 148). Broadhurst observes that '[d]igital sampling takes this fictitious nature of recording even further, creating heterogeneous, 'hyperreal' events that never could have happened' (Broadhurst. 1999, p. 148). Further issues of immediacy of feedback between performer and audience are raised by research into relationships between motion capture and live performance (demonstrated by the Brunel University Jeremiah project <<http://www.brunel.ac.uk/emstwr/projects/jeremiahanim.html> 2:11:2001>).

The immediacy of improvisation is a fundamental ethos in certain styles of music-making, wherein the compositional process of the formal world described by Doob is reduced to a minimum duration. Derek Bailey has commented on the attraction of improvisation as a celebration of 'music's essentially ephemeral nature', and that '[f]or many of the people involved in it, one of the enduring attractions of improvisation is its momentary existence: the absence of a residual document' (1992, p. 35). Elsewhere this immediacy has been described as 'the unquantifiable but nevertheless important element of feedback between performer and audience which reinforces the transactional, ritualistic nature of the event' (Bridger, 1986).

A less than exhaustive list of the arts includes categories of Painting, Photography, Architecture, Opera, Dance, Ballet, Poetry, Sculpture, Literature, Film, Philosophy, and Dramatic arts, each portraying individual characteristics of style and genre. These categories provide a test for Doob's contention: 'In all the arts, including even music, I would contend, the artistry of the creator involves a delicate interplay between the clock time spent in perceiving the art and the fictitious time

portrayed therein' (1971, p. 382). Doob's suggestion points to the universal quality of temporal matters, in as much as 'all the arts' evoke a perspective of fictitious time in ascendance of clock time.

As technological developments around the second millennium have increasingly enabled and enhanced the capture of the moment, exactly what is perceived in a moment has been open to intensive scrutiny. Interpretations of the term 'moment', as noted above, range from an attempt to define the biological moment (Fraisse, 1982, p. 149), the moment of hermeneutic comprehension (Kisiel, 1985, p. 4), awareness of non-linearity in performance (Edwards, 1997, p. 13), retrospective analysis of Wagner's *Gesamtkunstwerk* (Adorno, 1981, p. 33), attractions of improvised instrumental performance (Bailey, 1992, p. 35), formalised musical interpretation of Stockhausen (Mertens, 1983, p. 101), moments of peace lacking in 'the restless inquietude of European avant-garde music' (Polin, 1989, p. 229), to a defining characteristic of the Umwelt of prototemporality (Kramer, 1988).

The multiple emphases with which the term 'moment' can be interpreted, the precedent set by Barthes' argument for a theory of the (visual) still, and the paradox of media referred to by Johns' 'other side of the canvas', combine to necessitate a response regarding that which is still in music.

2.9 Language

The metaphorical characteristics of language provide both a tool for analysis and (where definitions are not carefully made) a means of introducing ambiguity. For example, 'moment' is a metaphor for a short duration of clock time, or, as we have seen, adopted by Stockhausen to describe a musical form as part of the compositional process (Mertens, 1983, p. 101).

Roman Jakobson's observation regarding the metaphoric and metonymic poles of semantics clarifies differences between similarity and contiguity: 'The development of a discourse may take place along two different semantic lines: one topic may lead to another through their similarity [metaphoric] or through their contiguity [metonymic]' (Jakobson. 1988, pp. 57-58). The collation of observations regarding the use of the term moment included above perhaps reveals aspects of similarity in use of the term, while revealing contiguity in the various interpretations

of the term. The use of words with which to describe musical activity has been observed as carrying a problem of metaphor by Scruton (1997, p. 51). Elsewhere, Kramer has described temporality as the 'governing metaphor of music' (1988, p. 384). Might the problem of metaphor be addressed in part by Glass through the composer's use of numbers as text to be sung in his opera Einstein on the Beach (1976)? The approach adopted by Glass is characteristically minimalist, although the incorporation of metaphorical values (in the representation of number) is reduced^{vii}.

An appraisal of musical events from a viewpoint which is overtly contiguous, or metonymic would highlight events which differ in character from each other and portray a minimum of similarity, but are contiguous by nature of their temporal procession (a characteristic of sample-based rap music).

The problem of musical movement in metaphorical terms has been addressed by Scruton, who has pointed out the paradox implicit in describing something which does not actually move; '[m]usical space, and musical movement, are not even analogous to the space and movement of the physical world' (1997, p. 51). The term movement may be separated in the sense in which it is applied to musical events into, firstly, the manner in which events of pitch, rhythm and harmony may be seen to 'progress', and secondly, the manner in which these events are subject to the forward movement of thermodynamic time. Scruton has defined issues relating to the perception of movement, concluding the importance of a temporal factor:

Movement involves three things: a spatial frame, an occupant of that frame, and a change of position within it. Change can occur, however, where there is no spatial frame, no dimension save that of time alone. Melody would be less mysterious if it were merely a sequence of acoustic changes; but it is change of a particular kind - the change that we know as movement. (1997, p. 49)

Judgements of movement, according to the interpretation Scruton suggests, involve aesthetic interpretation, dependent upon the metaphors perceived resultant from analysis of the subject. A dramatic evaluation of an aesthetic judgement of movement based on the perception of rhythm is offered by Deleuze and Guattari: 'A mistake in speed, rhythm, or harmony would be catastrophic because it would bring back the forces of chaos, destroying both creator and creation' (1988, p. 311). A

solution to the problem of metaphorical movement in music has been supplied by the use of the term 'vertical' by Kramer, which in effect 'sidesteps' the notion of lateral movement. (The implications of the term 'vertical' has potential for further reflection, and will be discussed later in the investigation.) That which is subject and that which is object shift meaning in the hermeneutic circle, as the two become part of a single circular movement, according to hermeneutic interpretation.

The concept of metre carries specific associations in Western music, connoting the associated terms rhythm, mensural notation, and prosody. Rhythm has been questioned and defined by Stockhausen as that which 'indicates intervals between changes, no matter what the changes are' (1974.184-185). Mensural notation involves the perception of measure, especially in relation to fixed duration. Prosody (the theory and practice of versification) depends upon judgements of the (aesthetic) laws of metre. These terms invoke varying degrees of flexibility within a context of metric evaluation, and suggest interpretation as that which is perceived as rhythm, the use of an organised system of measurement, and a set of inflexible durations with which to qualify moving events. To use these terms in the model of linguistic communication suggested by Jakobson, (context, message, contact, code), prosody is the context, rhythm the message, mensural perception the code, using a contact of, for example, a sequence of variations in pitch.

The use of terms which, by their very nature, reflect *a priori* assumptions points to a further aspect of communication. These assumptions, Scruton observes, foreground the view that the connection between thought and language has been interpreted as coercive. '[Heidegger's] philosophy shows, in Wittgenstein's words, "the bewitchment of the intelligence by means of language"' (Scruton, 1995, p. 261). Elsewhere, it has been observed by Kristeva that 'everyday language' is the language of Western metaphysics (1987). Kristeva further debates *a priori* assumptions, making reference to the metaphorical nature of the way in which ideas are discussed, wherein a given term becomes a metaphor for metaphysical presuppositions: 'Now, "everyday language" is not innocent or neutral. It is the language of Western metaphysics' and it carries with it not only a considerable number of presuppositions of all types but also presuppositions inseparable from metaphysics which although little attended to are knotted into a system' (Kristeva, quoted in Derrida. 1987, p. 19).

That language used to describe temporal values requires a defining cultural context represents a full circle for this overview of concepts of time. The problem of linguistic metaphor is potentially marginalised by Earle Brown when he comments on time as the 'governing metaphor of music' in his outline of compositional ethos: 'one should compose as little as possible, because the more one composes the more one gets in the way of time becoming the governing metaphor of music' (Quoted in Kramer. 1988, p. 384).

2.10 Conclusion

This discussion of concepts of time has evaluated perspectives from a variety of past and present multidisciplinary sources. Conclusions from each of the contexts discussed (of culture, philosophy, scientific method, biology, psychology, aesthetic values, selected arts, and language) regarding concepts of time are as follows.

Temporal concepts from a cultural perspective show temporality as reflecting values of a given society. Therefore, cultural values of teleology are reflected in a goal-oriented awareness of time (a characteristic of the West), in contrast to calendar systems reflecting cycles related to nonlinearity. Attitudes towards the temporal and the musical share a developing history. There is evidence to suggest more than one view of time in observed cultural differences.

References from the discipline of philosophy to the need for public time shared by society (who as individuals may experience a private time) confirm temporality as a subject of philosophical thought. This is further evidence for the consideration of multiple temporalities. It may be concluded that the search for a specific value is subject to the language of interpretation, representing a hermeneutic circle. A resonant philosophical tenet to emerge relating to temporality is the dialectic represented by 'being' and 'becoming', as described by Kramer after Fraser (Kramer. 1988, p. 394).

An evaluation of scientific process reflects the necessity for a method of qualification. The specific reference in the physical sciences to temporal measurement (based on the laws of thermodynamics) reflects cultural values in Western society of that which is objective, highlighting a perennial controversy between objective and subjective evaluation. Evidence gathered objectively

suggests that temporal measurement varies according to location (depending, for example, on proximity to sources of gravity). Again, this evidence supports theories of multiple temporality.

The study of biological processes has suggested species-specific temporalities, underpinning theories relating to multiple and hierarchical temporalities. Umwelt theory applied to music has developed over three stages: The first stage has at its core the work of a biologist, the second that of a philosopher, and the third that of a musicological analyst. The development of an alternative temporal language, therefore, has centred upon the concept of nested temporal hierarchy, which was developed by Fraser from the work of von Uexküll, before being developed in turn by Kramer.

From a psychological perspective, perceptions have been shown to vary from individual to individual. Similarly, the perception of pattern (from one event to the next) depends upon the psychology of the individual. Research has shown respective characteristics of left- and right-brain activity, with an attendant dialectic.

Aesthetic considerations have highlighted value judgements of pattern. One conclusion from an appraisal of aesthetic issues in relation to temporality explain individual differences in the perception of temporal duration. A further conclusion relates to the perception of temporal movement and its representation: temporal movement may be represented from a variety of perceptual perspectives, each suggesting a temporality. It has been observed that changing aesthetic values impact upon perceived temporality.

Examples of temporality in relationship to selected arts (depending upon a reflection of the wider view in the findings of investigation into examples) show a variety of temporal representation, providing perceived abstracts from the passage of clock time. Similarities and contrasts to musical representation of temporality are highlighted by, for example, three dimensional art forms such as sculpture. Represented temporality is distinct from temporality governed by the laws of physics.

Conclusions from a consideration of the use of language include observations regarding the communication of thought process being dependent upon terminology, or metaphor. A further observation is that the concept of metaphor has been applied to temporal awareness, suggesting that time (in the words of Earle Brown) is the

governing metaphor of music. The application of analytic terminology underpinned by interdisciplinary sensibilities has been tested using Kramer's concept of 'vertical' music. The review and development of appropriate linguistic tools for the evaluation of music may challenge existing terms of analysis.

The variety of available commentary, while providing extensive research material, may be seen as problematic because of the number of interpretative choices available when discussing concepts of time. A positive interpretation of the multidisciplinary dialogue regarding temporal perception is that it provides evidence to support a validation of hierarchical temporal theory. A further conclusion relates to the intimate relationship between music and time, pointing to a vocabulary, couched in disciplines of music, with which temporal matters can be addressed. To investigate this possibility, a review of specifically musical temporal perceptions is necessary, and will be addressed in the following chapter.

ⁱ The section on Language focuses on terminology. For an evaluation of poetic language and temporality, including T.S.Eliot's 'Four Quartets', see, for example, Doyle, R. 'Shaker Loops, Hypermeasure and the Nootemporal umwelt.' (unpublished paper, Middlesex University, 1999).

ⁱⁱ An umwelt – the German word for 'environment' - is also 'a level of temporality', according to Kramer's definition (1988, p. 454), borrowing from Fraser, who has written that 'temporal umwelts in the structure of human-time perception form a hierarchy of nested presents, corresponding to the temporalities postulated by the principle of temporal levels' (Kramer. 1988, p. 450). The six nested temporalities are characterised as the atemporal, prototemporal, eotemporal, biotemporal, nootemporal and sociotemporal umwelts.

ⁱⁱⁱ It may be fruitful to explore the list of six temporalities from a compositional approach. The results of composition informed by such philosophical analysis may provide further material with which to inform a discussion of temporal hierarchy.

^{iv} The attempt to express the mobility portrayed in the structures of Calder, its impact on the minimalist music style, and the relationship between this musical style and other arts are discussed at greater length in chapter 3.

^v Minimalism has increasingly incorporated that which may be seen as representative or derived from conventional European musical tradition: for example, the inclusion of melody in John Adams' Grand Piano Music (1992), or Reich's interpretation of a Chaconne in his Variations for Strings and Keyboards (1980).

^{vi} Gombrich has commented on Mondrian's work as a possible representation of jazz syncopation from the perspective of the painter (Gombrich. 1977, pp. 311-312).

^{vii} One explanation for Philip Glass's use of number is to avoid linguistic narrative and subtextual significance.

Chapter 3: Concepts of Time in Music

3.1 Introduction

This chapter focuses on developments in concepts of musical temporality (and some of the cultural values they represent) in Western art and popular music from the beginning of the twentieth century to its close. In particular, changing perceptions among musical practitioners and their audiences are addressed.

To track the course of changes in attitudes to time in music it is necessary to look at conventions in musical time-keeping (theoretical aspects of music technique for establishing mensural temporality) and their context. It is a hypothesis of this survey that changes in contextual criteria brought about altered demands on musical temporality, leading to changes in practice and subsequently theoretical conventions. It is also proposed that changes in contexts for the operation of musical conventions are primarily the result of developing technologies. A secondary reason for contextual change reflects the impact of new technologies, including the introduction of cultural conventions resulting from advances in communication technologies. Technology is cited here as having a primary impact on innovation in twentieth-century musical temporality, with culture as a secondary contributor.

3.2 Overview of musical practice in relation to theories of time

At a basic descriptive level, music, no matter how complex its language, exists within the flow of time as vibration. Using the analogy of an imaginary lo-fi listening system (for example a monaural transistor radio emitting a sine wave), music begins as a monophonic phenomenon defined by temporal duration. It is this fundamental relationship with time to which Zuckerkandl refers when he talks of compositions, although the context of his observation emphasises historical aspects of music making:

Do we perhaps take time more seriously and know more about it than other periods because we have heard Bach's organ fantasias, Beethoven's symphonies, whereas other periods have not? So perhaps we are not without justification if we expect an investigation of music to

cast some light upon the problem of time, one of the central problems of modern philosophy. (Zuckerlandl. 1956, p. 157)

Developing the analogy of the imaginary lo-fi monaural system to a stereophonic system establishes the spatial element of music and a potential increase in textural complexity. The imaginary system serves to make two points: Firstly, advances in technology allow a close inspection of vibration, and secondly, a spatial element in music is established. The following musicological analysis points to the need for a re-evaluation of available analytic terms: Zuckerlandl quotes Hegel, Schlegel and Schopenhauer to illustrate the outdated premise that music operates to the complete exclusion of space, and of the spatial arts:

In the conventional division of the arts into spatial and temporal arts, music figures as the temporal art par excellence. The division and its underlying principle are, as we shall see, poorly founded; yet the systematists are right when they see "the universal element", [Hegel: *Vorlesungen über die Aesthetik*] "the primal form", [Schlegel: *Vorlesungen über dramatische Kunst und Literatur*] of music in temporal succession. Schopenhauer writes: "Music is perceived solely in and through time, to the complete exclusion of space". [Arthur Schopenhauer: *The World as Will and Idea*] (Zuckerlandl. 1956, pp. 151-2)ⁱ

The relationship between musical time and geographical space finds definition in the parameters of the imaginary stereophonic system. The relationship described by Jacques Attali, however, is one defined by figures in the landscape of Western music history. Space and time for Attali are the geography of the globe and the celebration of historic musical archives:

[...] Liszt, in 1830, began to play the music of other contemporary composers in concert, and Mendelssohn played Bach (on the occasion of the centenary of the Saint Matthew Passion in 1829). Liszt gave repertory a spatial dimension and Mendelssohn, a temporal dimension. These two dimensions were necessary to the expansion of the music market, for

there is no broad outlet without syncretism or universalism. (Attali.1985, pp. 68-9)

Attali's observations refer to the space and time of music from the perspective of entrepreneurial marketing. Attali's use of the term syncretism may imply a justifiably derogatory view of music marketing, but there is a universal aspect of the diverse musics of the world: the characteristic that each unfolds in and occupies physical time. Indeed, in some ways the debate regarding what is and what is not music offers an attractive alternative to the debate regarding the nature of time: there is a reasonable chance for participants in the debate defining music to be right. The following observation serves to emphasise the difference between understanding the whole (as a sum of its parts), and the constituent parts of the whole (which appear to form a whole greater than the sum of its parts):

[...] [H]ours, minutes, and seconds are not what time is. Measure and thing measured are not one and the same. A kilogram weight is heavy, but it is not heaviness. The degrees of a thermometer scale by which we measure heat are not heat; we heat food on a stove, not by means of a thermometer. In the case of time, there even seems to be a contradiction, an opposition between measure and thing measured: the measure remains; time passes. (Zuckerlandl. 1956, p.153)

It is a subjective characteristic (shared with music) that time appears greater than the sum of its parts, and, on a good day, music at its best also appears to be greater than the sum of its parts. In the same way that there are a variety of methods, devices and degrees in the measurement of time (see chapter 2 and appendices 1 and 4), so there are also a variety of methods, devices and degrees in the measurement of musical duration and structure. Epstein's description of metric and rhythmic levels provides an example suitable for application to a large amount of Western diatonic music (see appendix 2). Recalling the multiple degrees of chronological measurement, Barbara Barry (1990. pp. 231-2), in her analytical overview of matters of time and music, Musical Time, cites the theory of time-molding, which divides musical events into two temporal categories: small-scale and

large-scale (see appendix 3). The theory of time-molding cited by Barry falls within (and is complemented by) the overview of temporal concepts provided by the on-line article Time Modelling, an attempt to survey the language and categorisation with which we address time (see appendix 4).

3.3 Rhythmic and metric hierarchies in Western music.

Aspects of music traditionally associated most directly with time are those of speed and duration, for which, respectively, 'pulse' and 'phrase' apply (see Epstein's review of rhythmic and metric hierarchies (1995, pp. 29-35)). While the speed (or tempo) of the composition dictates the speed of sequential events (using quaver or crotchet values equalling x Beats Per Minute), the duration of given material impacts on the texture of the piece. Therefore the duration of the initial statement of melodic material in, for example, J. S. Bach's Toccata and Fugue, in D minor offers a different texture to subsequent, accompanied statements, and the development of a temporal hierarchy is witnessed, initiating with pulse and culminating in measure and hypermeasure using building blocks of rhythmic grouping. With the introduction of motive to complement pulse and phrase, we achieve the three elements described by Epstein in his evaluation of hierarchic rhythmic levels, using the terms to refer to nested groupings of temporally linear events in increasingly large durations (see appendix 2). Epstein differentiates between rhythmic levels and metric levels, specifying a rhythmic hierarchy of pulse, motive and phrase, complemented by a metric hierarchy of beat, measure and hypermeasure. At first consideration, differences between the rhythmic motive and phrase may seem easier to identify than the metric measure and hypermeasure. The care Epstein demonstrates in his division of metric and rhythmic characteristics becomes understandable when attention is paid to the elements of disagreement regarding that which constitutes rhythm and the implications of analysis by meter. For example, Zuckerkandl regards the terms rhythm and meter as signifying opposite poles of aesthetic interpretation: 'Meter becomes the symbol of divisive, analysing reason, rhythm the symbol of the creative and unifying force of life. The radical opposition between rhythm and meter is an expression of the basic conflict of two principles, one fostering life, the other inimical to it' (Zuckerkandl. 1956, p.170). There is increasing potential for confusion

over how we should regard the unifying and creative force of life represented by rhythm, should we choose analysis using rhythm instead of meter. In Epstein's appraisal, motive falls between pulse and phrase, a halfway house *en route* from the chronon to the melody, but other observers suggest that things may not be so simple. Roger Scruton has questioned how we should describe the organisation we hear in hearing rhythm, suggesting that it is 'to Hegel's credit that he made the answer to this question crucial to the philosophy of music' (Scruton. 1997, pp. 21-22). The conclusion reached by Scruton highlights the value of interdisciplinary study: '[r]hythmic grouping is a Gestalt phenomenon, like the perception of visual patterns' (Scruton. 1997, p.29).

This explanation seems plausible, and will perhaps calm confusion almost to the extent Epstein promised, until further definition and evocation of the term 'rhythm' are apparently a theme and variation without a final cadence. For example, in Derek Bailey's Improvisation, a clarinettist recalls directions received from Karlheinz Stockhausen 'to play in the rhythm of the molecules which constitute your body. Or in the rhythm of the universe. There's a story of a second violin player who said, "Herr Stockhausen, how will I know when I am playing in the rhythm of the universe?" Stockhausen said, with a smile, "I will tell you"' (Bailey. 1992, p. 72). Bailey contextualizes the story by pointing out intercultural differences in interpretation of the term rhythm:

It might be worth noting that an Indian musician asked to play in the rhythm of the universe would immediately know what to do. The origin of the word *laya* - the right feel or pulse for a performance - is connected with the Hindu belief in the all-embracing, comprehensive rhythm of the universe as personified in Shiva. (Bailey. 1992, p. 72)

Elsewhere, Stockhausen addresses the term rhythm directly, supplying a definition of apparent clarity, until the attributes of rhythm are found to be shared by harmony and melody: 'Rhythm simply indicates intervals between changes, no matter what the changes are. And the same is true of harmony and melody' (Cott. 1974, pp. 184-185). In language reminiscent of Zuckerkandl, Henri Bergson has emphasised the combined effect of rhythm and meter without dwelling on

distinctions between the two: 'In the processes of art we shall find, in a weakened form, a refined and in some measure spiritualized version of the processes commonly used to induce the state of hypnosis. Thus, in music, the rhythm and measure suspend the normal flow of our sensations and ideas by causing our attention to swing to and fro between fixed points' (Bergson. 1910, pp. 14-15). Referring to Heinrich Schenker, Susanne Langer's conclusion regarding rhythm (which, like Scruton, notes the impact of the Gestalt in addition to affirming the importance of tonal, rather than temporal, organisation), offers pragmatic complexity compared to the apparent simplicity of Epstein's three-tiered list:

[T]he problem of rhythm in music as we know it is immensely complicated, and cannot be solved by mere reference to the drum and footfall of dancing hordes. In fact, Huber distinguishes between such purely temporal measure, and musical rhythm, which latter results from the internal, tonal organisation of the motif. [So it appears, he says, upon this view (which is shared, incidentally, by Ohmann) that musical rhythm, in contrast with the mere temporal rhythm of measures, grow out of the inner Gestalt-relations of the motif itself. This conclusion corroborates by scientific evidence the doctrines of Heinrich Schenker concerning meter and rhythm, namely that rhythm is a function of tonal motion, not of time division; such motion depends as much on melodic and harmonic tension and direction as tempo.] (Langer. 1963, p. 231.)

Despite disagreement regarding defining characteristics of rhythm, findings concerned with the effects of rhythmic patterns reflect the powerful nature of this musical element. Disciplines concerned with pedagogy and therapy have developed resources useful to the investigation of musical temporality. The development in twentieth-century Europe of Eurhythmics by Émile Jaques-Dalcroze, (a system of musical education developing music abilities through rhythmic movement) is underpinned by research findings in the field of music therapy. The following two examples of experiments involving reaction to specifically rhythmic stimuli document the power of rhythm. The first logs an emotional reaction:

Motte-Haber (1968) had ten rhythm patterns, differing in metre, sound event density, and homogeneity (e.g. uniform or dotted pattern), presented at three different metronomic tempos (ratios 1:2:4) to listeners, who rated them on a large number of bipolar scales (*Polaritätsprofile*). Metronomically rapid rhythms were rated happier (*frölicher*) than slow rhythms. Happiness ratings were strongly correlated with ratings of *subjective* tempo, which was related not only to metronomic tempo but also to sound event density and other rhythm characteristics in interaction with metronomic tempo. Similar relations appeared in Gabrielsson (1973, Experiment 1-3) using other rhythm patterns. (Gabrielsson and Lindström. 2001, p. 229)

The second example documents the intentional use of rhythm to support aspects of music's social function:

Among modern philosophers, it is, in particular, Edmund Gurney and Carroll Pratt who gave a central place to movement in their theories of emotional effects of music (Gurney 1880, Pratt 1931). The fact that much of modern-day music listening occurs under ritualised conditions in the concert hall, under more relaxed conditions in ones living room or car, or via earphones while pursuing all kinds of activities, masks the fact that throughout history much music was composed with very specific action tendencies in mind-getting people to sing and dance, march and fight, or work and play together. Composers of dance music and marches attempt to entice listeners to produce the most appropriate rhythmic movements, and many people actually report that they cannot sit still and have trouble suppressing rhythmic body sway and other movements when hearing some bars of a Strauss waltz. On the other hand, lullabies evolved because of their presumed ability to put children to sleep, thus leading to the opposite effect of inhibition of motor arousal (Trehub & Schallenberg 1995). (Scherer and Zentner. 2001, p. 377)

Note the use of the comparative terms 'subjective tempo' and 'metronomic tempo'; in the first example, and the term 'action tendencies' in the second of the examples given above. Subjective and metronomic tempi offer a musical variation to private and public time (see chapter 2). The development of action tendencies has pedagogical potential for music-based activities (especially where the focus is on repeated musical performance activity), providing a formal approach to the encouragement of 'muscle memory' (practised performance movements).

A further indicator of the power of music's rhythmic characteristics is the simplicity with which the aforementioned rhythmic devices take effect. A particularly effective formula for rhythmic grouping is the 6/8 time signature, supplying a reliable compound-time compositional device, the 'irresistible' waltz style, decorative groupings to embellish marching music, reinterpretation as triplet phrases, a sometime Blues staple, and a variety of possibilities for syncopation. Examples of variations afforded by 6/8 include the hemiola derived from emphasising a time signature of 2/4, Strauss' 'Blue Danube' waltz, 'When the Saints Go Marching In' (Anon.), the triplet figures of 'In The Mood' (Miller), 'The House of the Rising Sun' (Trad. Arr. Price), and the jazz-inspired themes of 'Better Git in your Soul' (Mingus). The examples cited point also to the way in which the interpretation and use of rhythm has evolved. At the beginning of the twenty-first century, Western music has assimilated rhythmic characteristics from cultures around the world, to the extent that it is characterised by cultural assimilation. Looking back to the 'discovery' by European nations of African, Asian and Oriental cultures (a side-product of empire-building), it can be seen that rhythm is a commodity of cultural conquest just as ivory is a commodity of commercial and biological conquest. Some observers have noted similarity between the organisation of orchestras of Europe and military bodies, a reflection of the model for government (head of state backed by the church and the army) found amongst Europe's nation states since Machiavelli's The Prince:

Gramsci has made the useful analytic distinction between civil and political society in which the former is made up of voluntary (or at least rational and non-coercive) affiliations like schools, families, and unions, the latter of state institutions (the army, the police, the central bureaucracy) whose role in the polity is direct domination. Culture, of course, is to be found operating within

civil society, where the influence of ideas, or institutions, and of other persons works not through domination but by what Gramsci calls consent. In any society not totalitarian, then, certain cultural forms predominate over others, just as certain ideas are more influential than others; the form of this cultural leadership is what Gramsci has identified as hegemony an indispensable concept for any understanding of cultural life in the industrial West. (Said. 1978, Pp. 1-11)

One source likens the role of the conductor to a chief of police (Bailey. 1992. p. 20). Edward Said points out the importance of supplying the cultural context of musicological study, while noting music's modern-day freedom from institutional and devotional rhetoric:

[...] [B]ecause music's autonomy from the social world has been taken for granted for at least a century, and because the technical requirements imposed by musical analysis are so separate and severe, there is a putative, or ascribed, fullness to self-sufficient musicological work that is now much less justified than ever before. The point I am making is that the study of music can be more, and not less, interesting if we situate music as taking place, so to speak, in a social and cultural setting. (Said. 1992, p. Xii)

Describing the music of Wagner and aspects of Viennese society, Adorno points out the barbaric element in the background of Western rhythm:

Wagner's music reckons with people who listen to it from a great distance, much as impressionist paintings require to be viewed from a greater distance than earlier painting. To listen from a greater distance also means listening less attentively. The audience of these giant works lasting many hours is thought of as unable to concentrate-something not unconnected with the fatigue of the citizen in his leisure time-and while he allows himself to drift with the current, the music, acting as its own impresario, thunders at him in endless repetitions to hammer its message

home. This is because it is conceived from the conductor's point of view. As late as the seventeenth century conductors used a heavy stick to beat out the rhythm: both percussion and conducting hark back to their barbaric origins and the idea of a conductorless orchestra is not without its justification. (Adorno. 1981, p. 32)

Each of the above observations imply the importance of rhythmic interpretation without stating it overtly. The necessity for a conductor to supply a public metronomic tempo, overriding individual subjective tempi, is the point made by Epstein in his affirmation that ensembles need a director: 'The conductor's upbeat must be exactly in the tempo of the music, for example, so that 95 musicians in an orchestra, each of different physical makeup and each playing instruments that speak in different ways and at different speeds, can enter precisely together' (Epstein. 1995, pp. 510-511). Alternatively, the element of discipline evoked by the demands of rhythmic interpretation can be exploited as a performance device, suggests Paul Fraise: 'Perhaps Chopin's remark can be generalised: Let your left hand be an intransigent and rigorous orchestra conductor and let your right hand do what it wants' (1982, p. 175).

Apart from those made by Said, the above observations are occupied with Western art music, and shed no direct light on musical and rhythmic conventions from global regions which have specific relevance to this investigation: Africa, India and the Orient. Influences of rhythmic characteristics from these precincts of the global village will now be addressed.

3.4 Rhythmic characteristics of music from Africa

It is well-documented that, with cultural empire-building as a fundamental contributing factor, rhythmic patterns and musical traditions from indigenous cultures of Africa fed into and formed the development of the Western musical style known as Blues. In African Rhythm and African Sensibility, John Miller Chernoff states that in Africa 'it is a drum and not a sceptre which is the symbol of the king and the voice of the ancestors' (1981, p. 35). Taking care to point out the duties of an ethnomusicologist, Chernoff offers a positive definition of Western rhythm before addressing the complexities of African polyrhythms: 'Through an elaborate system of

fixed intonations of exact intervals, the music moves by chords or melodies or both, and the rhythm is basically the duration of time behind each progressive step' (1981, p. 40). Comparing European music to African music, Chernoff establishes that rhythm is 'most definitely secondary in emphasis and complexity to harmony and melody. It is the progression of sound through a series of chords or tones that we recognise as beautiful. In African music this sensibility is almost reversed' (1981, p. 42).

From a perspective of musical theory, a defining characteristic of African drumming styles is their polyrhythmic nature, leading to complexities of rhythmic texture. This texture, according to Chernoff, is one which 'we only begin to understand by being able to maintain, in our minds or our bodies, an *additional* rhythm to the ones we hear' (1981, p. 49). Chernoff cites Richard Waterman's definition of the term 'metronome sense' to explain a sensibility which need not be developed for European music (Chernoff. 1981, p. 49). Does the additional rhythm afforded by a metronome sense constitute a nested temporality? The evocation of a parallel, complementary sense of musical time has similarities to the nested umwelts discussed in chapter 2.

Having read (as had Chernoff) Studies in African Music (Jones. 1959), the composer Steve Reich became attracted to African drumming (as well as Gamelan styles of Bali), stating that non-Western music offers fresh ideas for Western musicians (Reich. 2002, p. 69). The application of African sensibilities proved pertinent to Reich's interests, contributing to his development as a musician and to the emerging style of phase pattern pieces with which the composer was occupied. Reich relates his particular interest in African drumming:

I became interested in African music through A.M. Jones book, and I recently found a group at Columbia University with a Ghanaian drummer from the tribe Jones had written about. One of my reasons for going to Ghana and studying drumming is, in the very simplest sense, to increase my musical abilities. I studied rudimentary Western drumming when I was 14 and interested in Jazz, and this last piece, *Phase Patterns*, is literally drumming on the keyboard: your left hand stays in one position and your right hand stays in one position and you alternate them in what's called a

paradiddle pattern, which produces a very interesting musical texture because it sets up melodic things you could never arrive at if you just followed your melodic prejudices and your musical background. (Reich. 2002, p. 55) ·

Reich further explains that African studies confirmed his intuition that acoustic instruments could be used to produce music that was 'genuinely richer in sound than that produced with electronic instruments' (2002, p. 67).

The influence of African sensibilities used by Western musicians is cited by David Gans in his survey of Talking Heads. According to Gans, a methodology developed by Brian Eno and Talking Heads member David Byrne for the My Life in the Bush of Ghosts project was subsequently transferred as a working method for ensemble recordings. The methodology and reasoning behind it portray a notable absence of narrative, as the African sensibilities adopted by these Western musicians required an altered, improvisatory approach to construction:

Byrne went to work with Brian Eno on a joint project, exploring their mutual interest in African rhythm, spontaneous composition, found audio, and the desire to begin recording with no prearranged music and build everything from scratch in a process of collaborative phenomenologizing. 'We'd go into the studio and one of us would do something and the other would do something as a reaction on different tracks', Byrne explained, 'building things up until the whole thing took on some sort of identity...'. The duo used studios on both coasts, at various times with various musicians, creating beds of rhythm on which they laid fragments of foreign singing, television preachers, radio talk shows-and not a trace of conventional lyrics or melody. The result was almost more effective as casual listening than as the object of intense scrutiny. Not having been created in a logical and orderly manner, it wasn't meant to be listened to for literal content. [...] the [My Life in the Bush of Ghosts] album wasn't released until after its philosophical offspring, *Remain in Light*, which was built from the identical blueprint: *tabula rasa*. (Gans. 1986, pp. 77-8)

The emergence of a methodology combining African musical textures, Western technology and a heuristic approach can be identified in the descriptions supplied by the keyboard player and the singer of Talking Heads respectively:

Gerry Harrison: *Remain in Light* was almost like recording rehearsals. You might say it was started with a concept, part one of which was to be able to capture (and sometimes keep) mistakes that happen right when you start something. Part two was to create sections by building up parts and polyrhythms. [...]

David Byrne: [...] we'd record two and a half, three minutes of groove, and then through editing we'd expand it to, say, five minutes or so. Then we'd play over that. We figured it would be more efficient and economical, because when it came time to overdub you didn't have to play through eight minutes every time. We'd just break it into parts and work them one against the other until the song or piece or whatever you want to call it would begin to have some shape, some identity of its own. [...] There was a lot less Africanism on *Remain in Light* than we implied...but the African ideas were more important to get across than specific rhythms. (Gans. 1986, pp. 77-8)

The Western sources cited above each depict influences resulting from assimilated African rhythmic sensibilities. Chernoff's overview of ethnomusicological study defines a concern with rhythmic texture not found in Western European music; Reich's exploration of rhythmic idioms informs his development of phasing and choice of musical media for composition; and the methodology developed by Byrne and Eno reflects the adaptable immediacy of non-narrative texture joined with techniques reminiscent of *musique concrète*. Of particular relevance to the current study is Waterman's Metronome sense, which suggests a fruition of musicianship as the result of a focus on rhythmic nuances emanating from ensemble performance.

3.5 Rhythmic characteristics of music from India.

The influence of Indian music on Western musicians has been evident in the adaptation of the ragas found in the folk explosion of the late 1950s, and

subsequently with the inclusion of traditional Indian instruments on the seminal Beatles album Sgt Pepper's Lonely Hearts Club Band. The British guitarist Davey Graham included Indian tonality and tablas on his version of 'Leaving Blues' for his album of 1964, Folk, Blues and Beyond.... This selection of songs from around the world displayed an eclectic interest in blending musical styles and flavours some two decades before World Music became common parlance. Rhythmic conventions of India, characterised by talas, are reminiscent of the rhythmic modes of European tradition, but unlike their European counterparts have survived to be part of everyday musical life (see appendix 7).

Several sources refer to the pivotal relationship in Indian music between the teacher and the pupil: the relationship Philip Glass formed with Ravi Shankar illustrates this (in addition to clarifying other defining characteristics of Indian musical styles). In his autobiographical work, Opera on the Beach, Glass describes his encounter with Shankar while in Paris in 1965, a meeting which was to develop into a long-term teacher/pupil relationship:

[...] at the time I scarcely knew a note of non-Western music, and I spent the next several months with Ravi and his drummer, Alla Rakha. This protracted encounter with one of the great traditions of world music and one of its foremost practitioners had a profound effect on me. To explain, it is important to emphasise some major differences between Indian classical music and traditional Western classical music. First, there is the raga system governing the order and intonation (tuning) of the notes in a scale. This is a highly elaborate system in which the particular raga, or set of notes and ornamentation (*raga* actually means colour), is related to emotional states as well as times of the day. The particular raga in use (there are said to be some eight hundred in all) determines what we would regard in the West as melody and, by extension, improvisation.

Although this melodic aspect is fascinating, it was not what attracted my attention then, and not what has held it ever since. What came to me as a revelation was the use of rhythm in developing an overall structure in music. I would explain the difference between the use of rhythm in Western and Indian music in the following way: In Western music we

divide time - as if you were to take a length of time and slice it the way you slice a loaf of bread. In Indian music (and all the non-Western music with which I am familiar), you take small units, or beats and string them together to make up larger time values. This was brought home to me quite powerfully while working with Ravi and Alla Rakha in the recording studio. [...] Finally, when the musicians had arrived, Ravi would begin. *He would sing the music to me, and I would write it down, part by part.* [my italics] In other words, if the piece was, say three minutes long, he would first sing the entire three-minute flute part, then the entire three-minute violin part, and so on through our small orchestra of about nine players. [...] The problem came when I placed bar lines in the music as we normally do in Western music. This created unwanted accents. When the music was played back, Alla Rakha caught the error right away. No matter where I placed the bar line (thereby dividing the music in the regular Western style), he would catch me. All the notes are equal, he kept piping at me. (Glass. 1988, pp. 16-18)

The description Glass gives of the background to his introduction to the music of India provides evidence of a classical music with traditions and conventions comparable to Western classical music. There is also emphasis on virtuoso instrumental performances and musicianship. The images provided by Glass illustrate the long complex relationship between teacher and pupil described by Bailey as supplying the only methodology acknowledging characteristics of improvisation (Bailey. 1992, p. 8). The solution to the 'unnerving' problem faced by Glass was to remove the bar lines, at which point the realisation came that all the notes were indeed equal: 'Indian music was organised in large rhythmic cycles (called *Tal*). The interaction of melodic invention or improvisation with the rhythmic cycle (the *Tal*) provides the tension in Indian music, much as that between melody and harmony (rhythm is the poor relation here) provides it in Western music' (Glass. 1988, p.18).

An alternative view of the issues of ethnomusicological study described by Glass is offered by Martin Clayton's study of Time in Indian Music (2000) (see appendix 9). In this overview of rhythm, form and metre in North Indian Rag

performance, Clayton notes a potential area for study in the field of unmetred music, or alap, stating that the analysis of music in free rhythm has proved and remains an immensely difficult problem, requiring further development of both theoretical perspectives and analytical techniques 'before I or anyone else can do it full justice' (Clayton. 2000, p.9). Perhaps the difficulty of analysis represented by unmetred music is more problematic because, as Clayton also observes, there is 'an analytical trap resulting in attempts to address the form and structure of the product of a musical performance as "out of time"' (2000, p. 4). In Clayton's view, in accordance with Bailey, there is a practical element to Indian music which has little or no expression in any medium other than musical time. Bailey emphasises the empirical experience of trial and error in learning the art of improvisation: 'there is of course an appropriateness about this method, a natural correspondence between improvisation and empiricism. Learning improvisation is a practical matter: there is no exclusively theoretical side to improvisation' (Bailey. 1992, p. 8).

The philosophy of music discussed here is illustrated by Sufi Inayat Khan, who describes the special place held by music in the Indian view of the universe as being the 'exact miniature of the law working through the whole universe' (Khan. 1973, p. 2):

According to the thinkers of the East there are five different intoxications: the intoxication of beauty, youth and strength; then the intoxication of wealth; the third is of power, command, the power of ruling; and there is the fourth intoxication, which is the intoxication of learning, of knowledge. But all these four intoxications fade away just like stars before the sun in the presence of the intoxication of music. The reason is that it touches the deepest part of man's being. (Khan. 1973, pp. 4-5)

The attraction of aspects of Indian culture for those seeking alternative ideas for creativity in the second half of the twentieth century, such as Young, Riley, the Fluxus group, George Harrison and Glass is apparent in Khan's description. However, the important discovery for Glass's musical development was that rhythmic characteristic of Indian music which appears as a temporal opposite to rhythm in Western music: additive rhythm as opposed to divisive rhythm. As Keith

Potter's analysis puts it, 'the basic, but crucial, distinction between additive rhythm and "divisive" rhythm was the epiphany Glass was seeking' (Potter. 2002, p.258).

3.6 Rhythmic characteristics of the Orient

The journey this survey has taken during the last paragraphs has gradually led from one pole to another. These poles are not the geographical poles of North and South, but the cultural poles of the Occidental West and the Oriental East. The poles discussed here are of opposites in approach, to the extent that, when, in the West, the possibility of boredom after two minutes might precipitate a prompt change of activity, an Eastern approach promotes extending the duration of exposure: 'In Zen they say: If something is boring after two minutes, try it for four. If still boring, try it for eight, sixteen, thirty-two, and so on. Eventually one discovers that it's not boring at all but very interesting' (Cage. 1968, p. 93). Said has pointed out that by studying the Orient, 'Europe and the West has eventually achieved greater definition of itself, by observing its contrasting image, idea, personality, experience' (1992, p. 136). The contrasting image of musical temporality, therefore, is not of harmonic movement, but of harmonic stasis, as this description of the impact of Gamelan on Debussy suggests:

With composers such as Debussy and Stravinsky, we first encounter true harmonic stasis: no longer the tension-laden pedal points of Bach but rather segments of musical time that are stationary and have no implication to move ahead; no longer textural constancy as an overlay to harmonic motion but now the freezing of several parameters into miniature eternities. The impact on Debussy of the Javanese gamelan orchestra, which he first heard at the 1889 Paris Exhibition, has often been noted. Debussy was ready for an exotic influence and was looking for an alternative to Wagnerian harmonies. He understood that the strange sounds he was hearing were unfolding in a different time world. He heard sonorities that were allowed to be themselves, that did not exist primarily in functional relationships to other sounds, that were not participants in an upbeat-downbeat compositional world. (Kramer. 1988, p.44)

It is implicit in Kramer's description that the only music movement there is exists in harmonic movement: 'harmonic stasis results in musical time that [is] stationary and [has] no implication to move ahead'. Does this statement betray a hermeneutic insistence that musical movement can only be harmonic? If there is evidence of the completion of a hermeneutic circle in Kramer's observation, does it prove Said's point that by interpreting and defining the East, the West interprets and defines itself? It should not be forgotten that the 'musical theory and practice of many different cultures in many different epochs indicates that music can and does convey referential meaning. The musical cosmologies of the Orient in which tempi, pitches, rhythms, and modes are linked to and express concepts, emotions, and moral qualities' (Meyer. 1970. p. 2). One expression of these Oriental concepts has been reinterpreted by a Western practitioner in the pursuit of innovation, as Nyman relates:

Apart from the building of a complete musical system out of repetition, Riley's major achievement has been the installation of regular pulse into experimental music. He has spoken of such constants as pulse as 'the oriental way of being able to get far out. You can get as far out as you want if you relate to a constant. Working with time in this way you really get to know the constant and you find yourself in an entirely new area. Finding the right pulse rate is like finding the tuning which is perfect and settled. We always found that if we started out a little bit too slow, automatically everybody would get into the time, because at one pulse rate everything works perfectly. Finding this at the beginning, this tuning up to time, sometimes takes as much as half an hour. (Nyman. 1999, p. 146)

The attention paid to Oriental approaches and techniques have led Western musicians to experience paradigm shifts in approach to materials. The influence of the East has realigned the goalposts, and paved the way for increasing interest in ethnic musics, while allowing the works of, for example, Varèse and Schönberg to

be listened to with new ears. This is because, as Cage tells us, we no longer discriminate against noises:

Almost anyone who listens to sound now listens easily no matter what overtone structures the sounds have. We no longer discriminate against noises. We can also hear any pitch, whether or not it's part of a scale of one temperament or another, occidental or oriental. Sounds formerly considered out of tune are now called microtones. They are part and parcel of modern music. (Cage. 1980, p. 177)

Whether discrimination would have ceased solely as the result of Western self-reappraisal through study of the Orient, and without the interdisciplinary legacy of Marcel Duchamp, is difficult to determine. Nevertheless, it has been possible for the West to review its music-making in the light of what other cultures have to offer, and make some objective evaluations. John Rockwell emphasises the necessary reappraisal of rhythmic accomplishment in the West:

When it comes to rhythmic sophistication, even imperialist defenders of Western art music - those who still see all other traditions, including popular and folk musics within the West itself, as primitive - must concede that the West has been backward. There are good reasons for that, primarily the need for a steady beat in order for several players to articulate vertical chords. As orchestras expanded in the nineteenth century, this need for synchronisation grew more acute. The rhythms of the gamelan are also simple by comparison to those of Indian or African music, for the same reason. Were a composer to notate one hundred individual orchestral parts with the rhythmic complexity of an Indian raga exposition, the result could only be chaos. (Rockwell. 1985, p. 51)

A useful evaluation of characteristics in performance practice using idioms gathered from Africa, India and Bali is offered by Reich:

I came to the conclusion that there are three main differences, and that they are closely related. First, Indian drumming, both in the Hindustani (Northern) and Carnatic (Southern) traditions, is basically a solo music, while African drumming and Balinese mallet playing are basically ensemble musics. Second, Indian drumming is improvised within a given framework of a particular tala (rhythmic cycle), while Balinese mallet playing is composed and allows no improvisation. In African drumming, all the musicians have fixed parts, with the exception of the master drummer, who improvises on traditional patterns. Third, the basic rhythmic structure of any tala in Indian drumming, Northern or Southern, has one main down beat at the beginning of the cycle, whereas African drumming has multiple downbeats, often one for each member of the ensemble. In this respect, Balinese music is similar to Indian in that it has one main downbeat for the entire ensemble at the beginning of the cycle. It is no surprise then that Indian drumming is for the solo virtuoso, while in African drumming and Balinese mallet playing the individual parts, with the exception of the African master drum, are all relatively simple, and it is in the precise rhythmic blending of the ensemble that the virtuosity lies. Not being a virtuoso, not being interested in improvisation, and being thoroughly committed to my own ensemble that performs music I have composed with repetitive patterns combined so that their downbeats do not always coincide, it may be natural for my interests to run strongly toward Balinese and African music. (2002, p. 69)

The foregoing appraisals of characteristics found in Western, African, Indian and Eastern musical styles, show that musicians, after the mid 1960s, have had increased alternative methodologies to draw upon. A prominent feature of these alternative methods is a questioning of previously held values, especially those of hierarchy. The hierarchy in which harmonic movement was of primary importance is undermined, that of metric division is similarly questioned, and the assertion that all notes are equal clearly provides a stepping-stone to the concept that everything we do can be music. That the removal of hierarchy has taken place on a

multidisciplinary level and provided the origins of the Western style known as Minimalism, indicates a course for the survey to follow.

3.7 Minimalism:

3.7.1 Introduction

In this section of the investigation, it is contended that the advent of minimalism brought about an ontological development of music's temporal language. The reason for this change in outlook regarding musical temporality is attributable to an assimilation of external cultural values against a background of indigenous cultural innovation, in a geographical location relatively free of European restraint, and aided by technological advances in tape recording.

To define characteristics of minimalism, two surveys are referred to: the first, Keith Potter's Four Musical Minimalists, conducts an investigation of the style through an evaluation of four roughly contemporaneous musicians; the second, Edward Strickland's Minimalism: Origins, conducts an investigation of events contributing to the genesis and evolution of the style. Further context for the development of minimalism is supplied by Claire Polin's article, 'Why Minimalism Now?' (Music and the Politics of Culture. London, 1989.)

Potter identifies four individuals in his focused study of the development of minimalism as a musical style. Placing the geographic location of this multidisciplinary sensibility in the United States of America, four American nationals are credited with giving direction and definition (albeit unconsciously) to music of this late-twentieth-century style. Respective characteristics of the four include: drones of extended duration, complementary use of light, just intonation, representation of industrial appliances and dynamic extremes (Young); repeated phrase, use of pulse, mobile form, and manipulation of recorded tape as a compositional and performance tool (Riley); development of a methodology based on phase shifting, incorporation of African drumming, selected pitches, conceptual pieces, and development of 'music as audible process' (Reich), and; additive process, inclusion of cyclic form based on Indian aesthetics, exploration of 'rock band' tactics in 'classical' performance, and reductive non-narrative text in operatic form (Glass).

Providing a context for the stylistic development of minimalism, including contributing factors and exponents, Strickland specifies inaugural minimalist works

in identified disciplines.ⁱⁱ Of particular relevance to this survey is the use of minimalism to chart progressive steps of temporal awareness, denoting one view of musical temporality from another; from a conventional viewpoint to that of the avant-garde: these progressive steps denote an ontology of musical temporal language.ⁱⁱⁱ

3.7.2 Duration as experience and as structural device

Minimalist performances aimed for 'a fusion of the Western concept of time, passing from one sound-structure to the next, with the Eastern notion of cyclical phrases, circular return or simple stasis' (Polin. 1989, p. 233). Questioning the emergence of such performances, Polin points out that, 'as Terry Riley observed, the restless inquietude of European avant-garde music had never been able to give the world those moments of peace which were its greatest current need' (Polin. 1989. p. 229). The extended duration of musical performance would not be of remarkable interest (compared to the lengthy *gesamkunstwerks* of Wagner) were it not set against an emerging aesthetic to do with an exacting investigation of the intimate elements of a given media, stripped of customary companions. Polin supplies a list of negative attributes with which to metamorphose representation and narrative into minimalism: 'Ad Reinhardt, a mystical artist influenced by oriental philosophy, in 1957 wrote of the new aesthetic: "no texture, no drawing, no light, no space, no movement, no object, no subject, no symbol, no form, no pleasure, no pain"' (Polin. 1989, p. 226). A more music-specific description of the minimal aesthetic is supplied by Potter, similarly quoting a contemporaneous commentator: '[Tom Johnson's] list of epithets in this now classic article forms a good basis for a more detailed consideration of musical minimalism's chief attributes: "repetition...tiny variations..., hyper-clarity..., encouraging more subtle perceptions...making music less dramatic...[stemming] partly from certain Asian and African attitudes"' (Potter, 2000, p. 2).

Musical temporality in the context of minimalism highlights two areas. The first has to do with the duration of musical performances, and is characterised by the approach of Young; the second has to do with temporality as a musical device of structure, and is characterised by the approaches of Riley, Reich, and Glass. Both areas relate to Young's concern with exploring the innards of sound over extended

time-periods, a concern which lead to the musician 'spending nineteen hours awake, eight or nine hours sleeping' (Potter. p. 61).

3.7.3 La Monte Young

Such was Young's conviction that an alternative temporality to everyday measured time should be nurtured, he instigated the installation of a permanent Dream House which would, according to Young 'free the artist from the artificiality of measured time, and allow them to perform in real time' (Nyman. 1999, pp. 143-4). Sampling an antidote to the intricacies of serialism, the audience of Young's *Composition 1960 #7 (July)* experienced a perfect 5th 'to be held for a long time', thereby experiencing an 'oversimplified accessible music with no continuity, and with forms that were not bound up with memory' (Polin. 1989, pp. 236-8).

According to Potter and Strickland, there is controversy regarding stylistic purity in minimalism, and Polin's analytical contributions point to further controversies of validity. Putting issues of stylistic purity aside to focus on the innards of sound, a perfect fifth (or tonic and dominant pitches) held as simultaneous long-note drones, is undeniably a severely reduced form of harmony, as there is no conventional tonal movement. It is indicative of a culture focused on harmony as the primary musical element, that a reduction in harmonic movement constitutes minimalism, despite (let us assume the performance of *Composition 1960 #7* included improvised sopranino saxophone and tuned tympani) the continuing presence of rhythmic, melodic, and temporal musical elements.

The development of time as a structural device, the second area highlighted by minimalism, can be observed in the output of the four primary minimalists cited by Potter (Young, Riley, Reich and Glass) and contributions of the steps of the first contributed to the steps of the following. It is tempting to argue (in oversimplified terms) that Young offered a 'stretching out' of musical time; Riley explored ways of manipulating modular segments of stretched out musical time, adding mobility; Reich rigorously defined a pulse-based language inspired by the plasticity offered by tape and reinterpreted for conventional notation; and Glass, introducing cells of additive duration, reintroduced the new mobile temporal musical language into symphonic form. In further support of this argument, Potter describes the process by which Young adapted a blues structure to emphasise drone aspects of the music:

Young's Blues, as the composer called it, took the basic I-IV-I-V-IV-I blues structure, but prolonged each chord for as long as required: Young then provided a continuous, regular rhythmic accompaniment on each chord in turn, using the ka chunk chunka chunk chunka manner he had already begun to use at least two years before that. Jennings, meanwhile, improvised a continuously flowing stream of notes over this in a manner influenced by Coltrane and shortly to be explored by Young himself. The concept in that style of blues, Young has written, was to spend long periods of time on each chord change to emphasise the modal drone aspects of the music. The result was a static, modal, drone-style combining the sustained approach of Young's early notated compositions with a jazz structure articulated through improvisation. (Potter. 2000, p. 57)

Of relevance, in this description of Young's composition, to the way Western musical language was to develop, is the reference to the use of cyclic patterns combined with a reliance on jazz-informed improvisation. The use of improvisation in conjunction with phrases in cycle came to form a fundamental aspect of Riley's approach.

3.7.4 Terry Riley

With a demonstration of how musical time might be stretched having been supplied by Young, Riley's focus came to be occupied with manipulating segments of musical time. As Nyman asserts, 'Riley is basically a solo improviser who "multiplies" himself in performance by means of repetition, tape loops, tape delay systems and multi-tracking devices' (Nyman. 1999, p. 144). The necessity for danger is emphasised by Riley, signifying a further reliance on a jazz sensibility:

The ritual spontaneity of [my] music derives from the fact that most of my musical experience has been in the jazz hall, or places where musicians are actually on top of the notes they're playing, every note is danger. I think that music has to have danger, you have to be right on the precipice

to really be interested, not gliding along playing something you know. If you never get on the brink you're never going to learn what excitement you can rise to. You can only rise to great heights by danger and no great man has ever been safe. (Riley, quoted in Nyman. 1999, p. 145)

In his tape compositions, the danger of losing discernible vocal clarity was not an impediment to exploring tape's plasticity. The description supplied by Potter of Riley's experiments with *musique concrète* underline the possibilities of using modular segments of time as a structural device:

While the words 'she moves she' always remain discernible amidst their multiple reiterations, the sonic impact of individual fragments soon seems more important than any conventional semantic hold they may retain: the 'sh' of the word 'she', for instance, quickly becomes detached to form a purely percussive counterpart to the original percussive sound – a 'resulting pattern', to use Steve Reich's terminology. (Potter. 2000, p. 105)

The malleability of blues-based music is again apparent in this description of tape splicing to provide found-sound manipulation before the era of sampling:

While Reich built his early aesthetic on the rigour with which his compositions are constructed, Riley was uninterested in applying such structural severities to his material. His fascination was with the found sounds themselves and the process of what we would today call sampling. [...] [For *Shoeshine*], a blues solo played on the Hammond organ by Jimmy Smith - its identity now forgotten by Riley, who taped the music by chance from the radio - was cut up into loops and extensively reassembled, alternating passages in which the original material is clearly audible, if highly fragmented, with others in which it is only vaguely and intermittently discernible. (Potter. 2000, p. 117)

The combination of aleatoric, stylistic, and technological factors in Potter's description of Riley's tape manipulation fulfils an emergent pattern of music-making, to which Reich brought rigour and method.

3.7.5 Steve Reich

The intuitive methodology of Riley is compared with the deliberate methodology of Reich by the latter: 'With *It's Gonna Rain* and *Come Out*, [...] you're watching the minute hand on the watch. That's not the effect of Riley's pieces at all: there, you're taking a bath' (Potter. 2000, p. 165). Strickland's view of the achievements of Reich's methods is a reminder that objective method brings validation, and that with the output of the third of the four minimalists, a style of modern classical music had come of age: 'What distinguished Reich's processes from Serial and Cageian processes was their audibility' (Strickland. 2000, p. 242). The composer himself supplies a description of the process by which chance and error transformed an aleatoric event into a prototype for applied process:

[...] I discovered that the most interesting music of all was made by simply lining the tapes up in unison, and letting them slowly shift out of phase with each other. As I listened to this gradual phase shifting process, I began to realise that it was an extraordinary form of musical structure. This process struck me as a way of going through a number of relationships between two identities without ever having any transitions. It was a seamless, uninterrupted musical process. (Reich. 2002, p. 20)

Polin has suggested that minimalism emerged as a reaction to serialism, and her reference to 'the rise of a non-intellectual movement' (1989 p. 230) further suggests reaction to an intellectual movement. Polin's view would be supported by an evaluation of Riley's methodology, but the self-documented steps made by Reich challenge generalisations of non-intellectualism. The process Reich had discovered led to a period of experimentation, the results of which established four criteria with which the composer could apply to and refine his music-making; the modal and metric ambiguities offered as the result of phase-shifting, the attraction of 12-beat units, and the introduction of more complex structure (Potter. 2000, p. 182).

The sophisticated structural ways referred to here suggests Reich's 'interrogation of the Western classical tradition' (Potter. 2000, p. 248), figures from which he has been known to emulate. In the accompanying notes for Variations for Winds, Strings and Keyboards, Michael Steinberg, in describing Reich's 'mega-Chaconne', specifies the influence of Perotin, the French twelfth-century composer, to whom are attributed pieces in which single notes, 'stretched to enormous lengths, function as harmonic anchors' (CD booklet notes, 1980).

3.7.6 Philip Glass

While Reich established a voice for himself by exploiting divisive qualities of musical time, Philip Glass discovered and exploited modular cells of musical time constructed from additive beats: 'The basic, but crucial, distinction between additive rhythm and 'divisive' rhythm was the epiphany Glass was seeking' (Potter. 2000, p. 258). Glass supplies a description of events during which he was introduced to melodic and rhythmic characteristics of Indian classical music, and the impression they made upon him:

Although this melodic aspect is fascinating, it was not what attracted my attention then, and not what has held it ever since. What came to me as a revelation was the use of rhythm in developing an overall structure in music. [...] The whole thing was very unnerving. I had a studio full of musicians waiting for their parts, and I had to instantaneously solve a notational problem that I had never confronted before. Finally, in desperation, I dropped the bar lines altogether. And there, before my eyes, I could see what Alla Rakha had been trying to tell me. Instead of distinct groups of eighth notes, a steady stream of rhythmic pulses stood revealed. (Glass. 1988, pp. 16-18)

It is this 'steady stream of rhythmic pulses' to which Glass refers when he describes Indian and non-Western music as using beats strung together to make up larger time values (Glass. 1988, p. 17). The conclusion formed by Glass in the Parisian studio - confirmed by Alla Rakha - was that 'all the notes are equal' (Glass. 1988, p.18). The development of a personal style combining a training in Western classical conventions, non-Western musical sensibilities, and accessible

multidisciplinary performance values with a particular emphasis on music theatre has led Glass to negate descriptions of his music as minimalist. Indeed, Strickland points out that of the four minimalists discussed here, only Young acknowledges himself as such:

In addition to intentionless music, Glass once said he preferred music with repetitive structures; Reich has similarly opted on occasion for structuralism and *musique repetitive*, 'but basically I wouldn't go with any [term]'. Riley describes himself as probably the last person to ask about vestiges of Minimalism in his work. Young is the only one of four who acknowledges that he is a Minimalist, adding 'but that's only one of the things I am'. All four proved to be lots of other things. If their work had ended in May 1974 like Minimalism proper and this survey, the term would be a footnote in music history, something like Fluxus, and the survey would not exist. (Strickland. 2000, p. 252)

Strickland determines 1974, the year in which Reich started work on Music for 18 Musicians, as a marker for 'the city limits of minimalism, beyond which lie the suburbs' (Strickland. 2000, p. 235). The collaboration between Glass and Robert Wilson to produce Einstein on the Beach does not, according to Strickland's criteria, signify multidisciplinary minimalism, but it does illustrate the success with which innovative techniques of temporal construction in music and music theatre could be used. Indeed, Strickland notes the popular misconception that minimalism started in 1976 with Einstein on the Beach (Strickland. 2000, p.10). The impact of the musical style brought to the awareness of opera and cinema audiences by Glass's compositions and performances meant a wider dissemination of the evolved temporal language than to just the audiences of avant garde music in America (see below). The influence of minimalist music of the kind made by Glass has been noted as a contributing factor to developing styles in Europe: 'The composer's impact on German groups was probably the earliest and in some respects the most significant; among these were Cluster, Kraftwerk, Neu! And the bands involved with what became known as the German wave of metronomic keyboard music' (Potter. 2000, pp. 339-340). Reference here is made to emergent styles on the European

continent, especially Germany, while Potter specifies the relationship between Glass and British musicians Bowie and Eno before going on to note the impact of Glass on the commercial dance music of Giorgio Moroder (Potter. 2000, p. 340).

Strickland supplies a description of the same relationship, but with a tone indicating derision for minimalist emulators: 'Ironically, some of the most pretentiously arty art-rock had Minimalist roots, including a day-trip by erstwhile glitter-rock performer and chronic trendie David Bowie in the 1977 *Low* (symphonized by Glass in 1992)' (Strickland. 2000, p. 247). The regard held by European musicians for stylistic developments among American practitioners is illustrated by Karlheinz Stockhausen's interest in earlier minimalism. The following description of Stockhausen's relationship with the music of Young, in conjunction with the statements above regarding minimalist effects on rock music, serves to underline the pivotal position the minimalist style came to hold between the high-art of modern classical music and the low-art of popular, dance and rock music:

Karlheinz Stockhausen's exploration of the harmonic series, notably in *Stimmung* (1968), has often been linked to Young's example. Less noted is his possible impact on *Klavierstück IX*, the piano piece by Stockhausen which is similarly dominated by a dissonant chord, repeated in sequences governed by the Fibonacci series. [...] The German composer seems to have visited Young and Zazeela when in New York, in 1964 or 1965, and listened to a rehearsal of *The Theatre of Eternal Music*. He requested tapes of the groups performances which, perhaps surprisingly, Young gave him. Stockhausen's own musicians visited Young and Zazeela's Dream House installation in Antwerp in 1969. (Potter. 2000, p. 89)

The cultural relationship between America and Europe merits more attention than is available in this study, although the view of Roy Lichtenstein supplies a useful perspective speaking as a protagonist of the Pop Art style, answering the question what is Pop Art? with an answer rooted in an awareness of twentieth-century economic, industrial and technological progress: 'Everybody has called Pop Art 'American' painting, but its actually industrial painting. America was hit hard by industrialism and capitalism harder and sooner [...] Europe will be the same way,

soon, so it won't be American; it will be universal' ("What is Pop Art?" Answers from 8 painters,' Part 1, Art News, November 1963, p. 86).

3.7.7 The emergent temporal language: ontology and context

Support for an argument in favour of the ontology of an emergent temporal language is provided by documentary evidence depicting not only the music made by this generation of musicians, but of the musicological, social and cultural environment contributing to the pieces. Musicological considerations of the ontological development of a temporal language that could be applied to music are cited as jazz, music of Morocco and India, improvisation 'and what all that meant', and the integrated philosophy and spirituality of Indian music (Potter. 2000, p. 137). Nyman credits Riley with building a 'complete musical system out of repetition' in addition to installation of regular pulse into experimental music, quoting the composer's description of constant pulse as 'the oriental way of being able to get far out. You can get as far out as you want if you relate to a constant. Working with time in this way you really get to know the constant and you find yourself in an entirely new area' (Nyman. 1999, p. 146). Riley refers here to an immersion in a constant, proactively attained by him and collaborators. The local social context for stylistic variation and development is illustrated by Strickland:

Minimalism had influenced rock as early as the mid-sixties when Young's drones were transmitted via John Cale and others to the Velvet Underground, thence to a host of punkers enamoured of their belatedly fashionable nihilism. The drones descended from the eternal music of the spheres through Heroin's repeated tonic/dominant-cum-drones on-the-common-tone to the Ramones' Gimme Gimme Shock Treatment. Minor-mode Minimalist repetition, on the other hand, appeared opposite Krzysztof Penderecki's anguished microtonality in the 1973 score of *The Exorcist* in the form of Mike Oldfield's Tubular Bells. Riley's influence was felt there, and his second Columbia album proved eponymous to the group Curved Air, while, contrariwise, the leader of King Crimson, Robert Fripp, was to rechristen Riley's time-lag system, without undue humility, 'Frippertronics' fifteen years or so after its birth. The influence was not all

in one direction, however, since Glass's ideas of amplification from the late sixties derive more from rock than any classical source. (Strickland. 2000, p. 247)

The technological and ecological environment of Young's rural upbringing illustrate a similar immersion in a constant, although this was originally a reactive relationship between formative musician and his sound environment: 'Continuous sounds man-made as well as natural fascinated Young as a child: the humming harmonics of the step-down transformer at the local power plant; train whistles across the river; lathes and drill presses; wind, insects, water, trees' (Potter. 2000, p. 23). The impact of technology on the compositional approach of Young has a parallel with the approach of Messiaen. Both composers show concern with recreating aspects of sound environments provided by the natural world; for Young, the creation of an environment filled with the humming harmonics of the step-down transformer (*The Melodic Version of The Second Dream of The High-Tension Line Step-Down Transformer*); for Messiaen, as Paul Griffiths points out, the creation of an environment enhanced by global musical influences and birdsong:

In musical terms, the work [*La Transfiguration* (1965-9)] draws on Messiaen's whole repertory of ideas and techniques, from Hindu rhythms to gamelan percussion writing, from Greek metres to modal harmony, from plainchant melody to bird song. This last, a principle source of material in most of Messiaen's music since the early 1950s, represented for him the true, lost face of music, a music, as it were, in a state of grace, unsullied by human civilisation. In his transcriptions, based on notations in the field, he tried to convey the melodies, rhythms and timbres of many different bird songs, and some of his later works were created very largely for this natural material. The *Catalogue d'oiseaux* for piano (1956-8), for example... (Griffiths. 1994, p.125)

For Young to emulate the ambient sounds found in the environment of his childhood in a fashion similar to Messiaen's emulation of the ambient sounds of nature, indicates a difference in attitude to the technology of industrialisation. On the

one hand, Young's acceptance of technology signifies a characteristically American faith in the benevolence of industrial society, while on the other hand, Messiaen's rejection of sounds other than of an environment unsullied by human civilisation, indicates a comparatively humble awareness of human hubris, a European characteristic, born of European experience. The impact of America's technologically active environment on an earlier composer, as described by Peter Conrad, highlights by comparison the selective minimalism of sound sources demonstrated by Young:

The composer Edgard Varèse moved to America in 1915, and felt that he was living outside the protectorate of sonic reason, surrounded by indeterminate, intemperate sounds - angry car horns, the alarmist sirens of police cars and fire-engines, hammers and electric drills, the clattering elevated railway. Those raw, untuned noises penetrated his room in downtown Manhattan and found their way into a long orchestral poem which he called *Amériques*, given its first performance in 1926. Varèse cautioned that the work did not simply transcribe what he heard in the city. Its title, he said, symbolised discoveries of every kind, referring to 'new worlds on earth, in the sky or in the minds of men' - the multiple epiphanies of modernity. After sedate Europe, the uproar of New York seemed somehow cosmological. With its thundery ructions and eruptions, *Amériques* sounds as if the big bang were still happening on West 14th Street. (Conrad. 1998, pp. 502-3)

Noting the size and variety of industrial sound sources in Conrad's description, it is possible to interpret the minimal approach adopted by Young as a reaction of overexposure to an environment outside the protectorate of sonic reason. Indeed the comparisons between Varèse's stimuli and Young's highlight the reason for minimalism's appearance as a reaction to over-stimulation on an everyday basis.

3.7.8 The Impact of technology

Technical advances in the resources becoming available to music makers of the 1960s had a consequent impact on composition. The tape machines available

meant, for Riley, access to methods of tape manipulation, (allowing adventures in cutting up modal jazz), and for Reich, the technical ability to capture an emergent style of urban preaching (fuelled by urgent social and political issues of the day) in the voice of Brother Walter in Union Square. The plastic medium of tape allowed composition by re-sequencing modules of performed music. In performances of music featuring tonal harmonic movement, rearrangement would be subject to the usual teleological conventions of harmony. In order to side-step such restrictions, reduced harmonic movement is preferable. Potter's description of a number of convergent musicological, stylistic and technological factors indicates the advantages of avoiding conventional diatonic tonal harmony:

[Music for The Gift is] mainly based on a recording of [Chet] Baker's band playing Miles Davis's *So What*, from his 1959 album *Kind of Blue*; Riley recorded all the instruments individually, which then allowed him to cut up and reassemble the lines as he chose. Davis's abandonment of traditional chord changes in favour of a modal approach involving a much smaller number of harmonic shifts - an approach made famous by *So What* - was in itself a gift to someone exploring the possibilities of using the time-lag accumulator on such instrumental material for the first time. While allowing Riley to obtain rich cumulative effects, it avoided the sort of clashes inevitable when subjecting to such processes any music with a faster rate of harmonic change. (Potter. 2000, pp. 106-7)

The device referred to as a time-lag accumulator is a tape-delay system using two machines (the basis of 'Frippertronic' 15 years later), again pointing to the impact of improving technology on music-making:

[...] Riley gained access to the ORTF radio studios in Paris. Here, he explained the looping technique with the echoplex he had used in San Francisco to a French technician, who proceeded to set up a tape-delay arrangement with two Ampex tape recorders to create what the composer calls the first time-lag accumulator. This offered a more sophisticated application of delay devices than were possible with the echoplex used in

Mescaline Mix, permitting a much cleaner and more vibrant-sounding build-up of layers of the same material repeated against itself. (Potter. 2000, p. 105)

It was the development of a methodology based on accumulating taped fragments of sound by Riley (resulting in the 1961 *Mescaline Mix* composition) that suggested to the composer that repetition itself, rather than Young's concept of sustained sounds, could be made the chief means of musical organisation (Potter. 2000, p. 99).

While Riley subsequently used modal jazz as a primary component for his looped material in 'Music for The Gift', Reich chose material which similarly reflects contemporaneous events, but of a more social extra-musical nature. In describing the material which supplied the basis for 'It's Gonna Rain', Potter evokes the social anxieties of the day, and their partial manifestation in an emergent urban American culture:

In early 1965, Brother Walter's sermon suggested something more immediate than the fire-and-brimstone message typical of its type. The Cuban missile crisis of October 1962 had created the feeling that nuclear disaster was a finger on the button away, and even more than two years later, this gave the story of Noah's Flood a fresh, and urgent, dimension, enhanced by the repetition characteristic of this style of evangelical style of preaching. The words *It's Gonna Rain* thus offer a metaphor for impending nuclear holocaust. (Potter. 2000, p.167)

With characteristic attention to methodological detail, Reich explains how experiments with recordings of Brother Walters's words supplied an early experience of phase-shifting:

I had intended to make a specific relationship: "it's gonna" on one loop against "rain" on the other. Instead, the two machines happened to be lined up in unison and one of them gradually started to get ahead of the other. The sensation I had in my head was that the sound moved over to

my left ear, down to my left shoulder, down my left arm, down my leg, out across the floor to the left, and finally began to reverberate and shake and become the sound I was looking for – “It’s gonna/It’s Gonna rain/rain” – and then it started going the other way and came back together in the centre of my head. When I heard that, I realized it was more interesting than any one particular relationship, because it was the process (of gradually passing through all the canonic relationships) making an entire piece, and not just a moment in time. [...] it’s precisely the impersonality of the process that invites this very engaged psychological reaction. (Reich. 2002, p. 21)

Reich's observations demonstrate the validity of Riley's idea that repetition could be a chief means of musical organisation, and provide support for Potter's affirmation that '[w]hile Young's early exploration of sustained sounds had provided Riley, and others, with the main inspiration to develop other forms of minimalism, it was the repetition of small patterns or modules, not the drone, which was to prove capable of wide application' (Potter. 2000, p. 148).

Further impact of technological improvement - in addition to introducing an area in which minimalist music was to prove particularly applicable - is evident in Riley's foray into the fledgling world of Disco, for which Riley wanted to give his new piece [You're Nogood] [...] a cleaner sound (Potter. 2000, p. 119). Potter goes on to describe the apparently entertaining results of Riley's embryonic disco track, signalling the necessity of consistent metre in a social dance environment (Potter. 2000, p. 120). The complementary relationship between minimalist music and dance music finds supporting evidence in the Discotronics of Robert Fripp ('This album [...] is a continuation of my interest in dance music, originally expressed as Discotronics' (Fripp. liner notes, 1981)), the New Wave success of Talking Heads (Strickland, 2000 p. 248.), the German metronomic keyboard music dynasty presided over by Kraftwerk, and the Glass-inspired production of Giorgio Moroder's 'Love to Love You' (Potter. 2000, pp. 339-340). Reich, meanwhile, demanded and exploited the precision of state-of-the-art tape machines to deliver a first glimpse of the phase-shifting technique with which he was able to abandon machines and build a career writing such compositions as Music for Eighteen Musicians: 'surely one of

the masterpieces of late twentieth-century music' (Potter. 2000, p. 245). Reich's 'It's Gonna Rain' had also marked the way forward from tape-based *musique concrète* to the later technology of sampling.

Three factors in addition to that of technology which have a bearing on the developments of temporal language made by Young, Riley, Reich and Glass include a partial assimilation of cultural values from the continent of India, an exploration of jazz-influenced improvisation and tonality, and a proximity to rock music. The close relationship between Indian classical music and philosophy points to circumstances favouring the exploration of alternative lifestyle through time. Potter cites this relationship in a description of Young and Zazeela's mentor, Pandit Pran Nath (Potter. 2000, pp. 79-80).

One result of the search for alternative sensibilities is manifested in the adapted days of Young and Zazeela, leading to their Dream house installations, and as has also been seen, jazz-influenced improvisation is evident, in the Coltrane-influenced combination/permutation techniques of Young. The cut-up sequences of Chet Baker's group playing Davis's 'So What', facilitated by the modal tonality of that composition, used by Riley to form 'Music for The Gift' is arguably of greater significance for the advancement of a mobile temporal language than Young and Riley's increased preference for just intonation (Potter. p. 139).

The use of amplification for The Theatre of Eternal Music and the crossover by John Cale between Young's project and The Primitives marks one route by which the drone infiltrated rock music. The affiliation with Fluxus and alternative performance spaces was a further characteristic shared by minimalist and rock styles. An additional - although by no means exclusive - characteristic common to minimalism and rock music, is found in the various assemblages of personnel formed respectively by Young, Reich and Glass. Indeed, as has already been observed by Strickland, it is possible to trace the influence of each of the American composers on some aspect of rock music: the impact of Young's drones on The Velvet Underground; Riley's influence on European groups, and the symphonic commentaries supplied by Glass of the music of Bowie and Eno. Reich's influence on the sample-led style of 1990s UK House music is apparent in Mark Prendergast's detailed description of what might be regarded as a commercial progeny of minimalism and rock:

The nine-minute twelve-inch original [of The Orb's Little Fluffy Clouds] was framed around American singer Rickie Lee Jones's reminiscences about the natural beauty of Arizona, where she grew up. Heard over the introduction was the distinctive harmonica tone from Ennio Morricone's theme for the 1968 film *Once Upon A Time In The West*. Swooping plane engine sounds were also audible until the start-up of Steve Reich's 1987 Minimalist piece for guitarist Pat Metheny, *Electric Counterpoint*. Radio broadcast snippets, bells, various synth stabs and electronic whoops led the listener into the familiar thumping beat of House. Defined by a soft but deep production sound with crystal clarity and excellent separation, Little Fluffy Clouds made the accelerated 130bpm of Hardcore Techno seem primitive by comparison. (Prendergast. 2000, p. 408)

Combined factors of music from film, the contemporary classical canon, found-voice narrative, and a variety of technical innovations and techniques described by Prendergast illustrate a method of music-making growing in prevalence since the emergence of dance music styles centred on disco-like venues with technically sophisticated sound and light systems. The eclectic nature of the sampled dance music described above echoes the eclectic nature of the influences and activities of Glass, who in particular benefited from exploiting certain rock sensibilities in his early career, as this description by the composer of a concert at the Film-Makers Cinematheque in September 1968 illustrates:

The whole concert was conceived as a visual, as well as musical, presentation. The scores were printed and bound together in accordion-fold fashion so they could be opened up, unfolded and set up in geometrical constructions that echoed their titles. For example, when Dorothy was playing *Strung Out*, a solo for amplified violin, the music was tacked onto the wall, running about fifteen feet before taking a right-turn out from the wall and forming an L-shape. Thus the title meant (1) that the music was strung out along the wall; (2) that it had to do with the idea of stringing a violin; and (3) it played on the current colloquialism of being

strung out, i.e., at the end of ones tether, of being dragged to the very edge of something. There was another piece, *Music in the Form of a Square*, a play on the title of Erik Satie's *Music in the Form of a Pear*. [...] The music was amplified with contact microphones, giving the performers total freedom of movement, but with the sound physically located by the loudspeakers.

It was a very conceptual concert. A very *neat* concert. And it was both visual and musical. The audience was mostly artists, about 120 people which, in the little Film-Makers Cinematheque, made the place seem *packed*. It was considered very successful but, more important, these were 120 very enthusiastic people. The music meant something to them in terms of their own aesthetics, something they were familiar with. (Glass. 1988, p. 20)

Of the two areas of musical temporality discussed above, the first, duration of performance, can be seen to have facilitated the second, duration as structural device, so that by the time of Glass's Einstein on the Beach, additive duration has been incorporated into an increasingly mainstream musical vehicle.

3.8 Conclusion

To conclude this overview of minimalism in music, evidence suggests that the influence of non-Western attitudes brought about a re-evaluation of aesthetics leading to a re-evaluation and development of the musical language of time. Wim Mertens points out the identification of John Cage (a figure of influence prior to the inception of a minimalist aesthetic) with 'macro-time', the nature of which is essentially static, and duration as an atomised conglomerate of moments, without relation to past or future as opposed to dialectical time (Mertens. 1983, p.107). Mertens also regards the use of non-European techniques as 'a symptom of the ability of the modern culture industry to annex a foreign culture, strip it of its specific social-ideological context and incorporate it into its own culture products' (Mertens. 1983, p. 88).

The emergence of the minimalist style in music stems from the place music holds in relation to the other arts, therefore, having received an initial impetus from

painting, '[i]t did not take long for Minimalism to become one of the most uncompromising and pervasive aesthetics for our time, bringing about decisive changes not only in painting and sculpture, but also in music and dance' (Gablik. 1994, p. 252). Indeed, Gablik notes that minimalism succeeded in uniting the arts as a comprehensive stylistic movement (1994, p. 245). In support of this view, it has been commented that what Chartres is to the Gothic and St. Peter's to the Baroque, the World Trade Centre is to Minimalism (Strickland, 2000 p. 9). Although Strickland wrote prior to the events leading to the destruction of the World Trade Centre, his awareness of the invalidation and end of minimalism is apparent in his evaluation of the musical offspring of minimalism, New Age music, which 'domesticated Minimalist repetition to such an extent that it is difficult to say whether New Age music represents the Mantovani or the Sominex of Baby-boomers. Its utterly specious claims to expand consciousness, while inducing *unconsciousness*, represent the last gasp of countercultural ideals for refugees to the same suburbs they once fled in youthful derision' (Strickland. 2000, p. 248).

This overview of minimalism has offered six points for consideration in the overall study of time in the experience of music. The first point has to do with concepts of musical movement. The sonic explorations of Young into the innards of time demonstrated the beginnings of a new kind of musical time for Western practitioners, which sought to create something potentially dramatic out of the apparent static (Potter. 2000, p. 69). The close proximity between musical activity and the passage of time is repeatedly highlighted by activities and reflections of Young ('Since tuning an interval establishes the relationships of two frequencies in time, the degree of precision is proportionate to the duration of the analysis' quoted in Nyman. 1999, p. 143) and Riley ('whose study of the tabla taught him a great deal about rhythm and the experience of time' Potter. 2000, p.136).

The second point has to do with the impact of tape loops on musical texture. The use of long loops by Riley produces an essentially textural effect (Potter. 2000, p. 107). This produces a moving and merging sweep of colour rather than creating the dramatic shift of perspective characteristic of a conventional classical modulation (Potter. 2000, p. 114). The recognition of the potential for sweeps of colour manifested itself as In C, in 1968: 'As Duckworth put it [...] it was *In C* that gave

voice to the minimalist movement in America. In some ways, it became its anthem' (Potter. 2000, p. 150).

The third point is concerned with the interaction of the practitioner with the medium, the practitioner having been informed by multidisciplinary developments in approach. A parallel can be drawn between Riley's predilection and the methods used by Jackson Pollock in his direct painting of canvas: 'On the floor I am more at ease. I feel nearer, more a part of the painting, since this way I can walk around it, work from the four sides and literally be "in" the painting. This is akin to the method of the Indian sand painters of the West. [...] It is only when I lose contact with the painting that the result is a mess' (Pollock. 'My Painting' Possibilities I, Winter 1947-8. in Johnson. 1982, p. 4).

The fourth point has to do with the dissemination of the minimalist style in music. The connection the originally American style has made between the philosophies of the Occident and of the Orient demonstrates a decentralisation of style. That elements of minimalist sensibilities can be detected in the work of such diverse figures as the high-art composer Stockhausen and the low-art dance music producer Moroder demonstrates aspects of appeal and utilitarian nature. Potter has pointed out that Reich's reputation 'outside the Manhattan artistic community can be pinpointed in three quite different musical areas: English experimental music, Western classical music and Western popular music' (Potter. 2000, pp. 248-9).

The fifth point is concerned with those figures affiliated with the minimalist style, but negate the label: of the four primary figures in the movement, only Young concedes to the term. The British composer Michael Nyman,^{iv} although supplying music for films in a style not dissimilar to Glass, is not commonly regarded as minimalist, because of his nationality. There are also signs that the evolved temporal language developed by the musicians of the 1960s has passed into common usage by a second generation of minimalist composers, characterised by John Adams:

It is noticeable that while most of The Minimalists gained their experience of melodic and rhythmic thinking via a close and sustained study of African, Indian and Balinese music, Adams absorbed the essentials of these influences directly from the works of the minimalists themselves.

His departure point was where his minimalist forerunners had already arrived. (Karolyi. 1996, pp. 114-115)

The orchestral and operatic work of Adams (such as The Chairman Dances of 1985), in addition to the continued output of Glass for symphonic ensembles, points to a situation wherein modern classical music has assimilated the metric and temporal innovations of minimalism into the conventional musical language of the Western orchestra. With the symphonic commentaries made by Glass of the music of Bowie and Eno, audiences of ambient and art-rock have witnessed a validation of this particular genre of music.

The sixth and final point to be made here returns to the subject of musical texture. The practice of soundscape production using analogue and digital delay systems, developed from the time lag accumulator experiments of Riley, offers the practitioner a spontaneous and direct means of contact with the medium. The technique has clear parallels with the method used by Pollock (as stated above), and as such carries with it a mark of the unique in an age where repetition, reproduction and copying are widespread occurrences raising questions about the inherent value of any given art work.

ⁱ Primary sources cited by Zuckerkandl in his text are: (1) Hegel, Georg Wilhelm Friedrich. *Vorlesungen über die Ästhetik* (1835, rev. ed., 1842. See *Hegel's Aesthetics: Lectures on Fine Arts*. Trans. T. M. Knox, 1975); (2) Schlegel, August Wilhelm. *Vorlesungen über dramatische Kunst und Litteratur* (1808, *Course of Lectures on Dramatic Art and Literature*. Trans. J. Black, 1815, rev. ed., 1846); and (3) Schopenhauer, Arthur. *The World as Will and Idea*. Trans. R.B. Haldane and J. Kemp. London: Kegan Paul, Trench, Trübner & Co., 1896.

ⁱⁱ These are: in the field of painting, Barnett Newman's 'Onement 1' 1948; of music, Young's 'Trio for strings' 1958; of sculpture, Robert Morris's 'Column' (c. 1961); of cinema, Andy Warhol's 1963 film 'Sleep'; of dance, Simone Forti's 'Dance Report' of 1960; the prototypical minimalist literature of Joan Didion's 'Play it as it lays' (1970); and Samuel Becket's works are cited as underpinning minimalist dramatic narrative (Strickland. 2000, pp. 9-12). In supplying an overview of the impact of minimalist sensibilities on late twentieth-century Western culture, Strickland cites, in addition to these artworks, culinary minimalism in the form of Nouvelle cuisine, and the replacement of Bourbon with 'virtually tasteless vodka' (2000, p. 9).

ⁱⁱⁱ The analogy of music as a language is used with caution, mindful of Sloboda's view that such an analogy should not assert another natural language, could be exploited in metaphorical ways, and that is something to be evaluated, not assumed (Sloboda. 1985, pp. 12-13).

^{iv} Nyman's Experimental Music: Cage and Beyond is widely regarded as a seminal study of modern music, and includes a chapter dedicated to minimalism.

Chapter 4: Definitions of Tempomorphic performance

4.1 Introduction

In this chapter I shall argue for the perception of multiple temporalities in musical experience, and that the evaluation and study of these temporalities be termed 'tempomorphic', derived from tempo (speed) and morph (form).ⁱ By establishing epistemological evidence to support an argument for multiple temporalities, I shall then address defining characteristics of tempomorphic practice in music. To illustrate the development of music offering alternative time worlds, reference is made to compositional and recorded examples taken predominantly from Western acoustic and electro-acoustic music dating from the early twentieth century. There follows a debate of issues concerning the impact of tempomorphic awareness on performance. A discussion of implications for tempomorphic research concludes the chapter. Reflecting its concern with temporal issues, this part of the investigation is divided into three sections: past, addressing the need for research; present, including extant examples and observations regarding research methodology; and future, addressing implications of issues discussed.

4.2 Past: the need for research

The context for a discussion of temporal hierarchies is divided here into two areas: 'cognitive temporal perception', or the subjective perception of passing timeⁱⁱ (of the individual and of society) and issues of developing musical practice informed by 'aesthetic awareness'.ⁱⁱⁱ Changes in emerging musical practice, it is suggested, give rise to an area of research investigating causes and implications of performance practice.

4.2.1 Temporal perception

Music in performance and reception offers alternative linear temporalities, emphasising differences between objective time and subjective time, as Jonathan Kramer's statement regarding the meaning of music suggests:

The meanings of music are temporal owing to music's unique ability to create different kinds of time, often simultaneously, which resonate with the nonlinearity (and linearity) of our inner thought processes as well as with the

linearity (and nonlinearity) of our external lives in society. (Kramer. 1988, p. 15)

Of the two kinds of time referred to here, that of the individual and that of society, social temporality will be addressed first.

A precedent for perceived temporal hierarchies is found in existing literature referring to a communal, objective time which is co-existent with the subjective time of the individual. Objective time has been described as a 'public neutral object' by Bertrand Russell (1967, p. 9), while Martin Heidegger (1995, p. 464) has shown that 'Everyman' directs him or herself 'according to it'. The subjective temporal perceptions of the individual are governed, according to the laws of thermodynamics, by the psychological arrow of time (Hawking. 1988, p. 145). It is the psychological arrow of time which supplies us with a sense of duration. The subjective distortion of durations from their objective time norm has been referred to by Igor Stravinsky as 'psychological time' (Kramer. 1988, p. 454). These durations are not necessarily the same in each individual, a reminder of the reliability of subjective awareness questioned perhaps most famously by René Descartes (1994, p. 76). However, attempts to quantify the psychological present have supplied a measurement of approximately '3 seconds':

This discussion [of the measurement of subjective duration] in turn leads to the phenomenon of the 'psychological present', which is the critical period of time within which we can perceive and organize a succession of events. Though it is not an absolute time period, roughly 3 seconds seems to represent this critical present. Fraisse, citing other studies, points out that the average length of a musical bar in religious hymns is 3.4 sec. The average duration of a line of poetry is 2.7 sec. Further examples (not cited by Fraisse): Most musical motives fit this 3-second period, as do most minimal phrases in language. (Epstein. 1995, pp. 510-11)

A development of the idea of more than one temporality is found in the results of investigations into theories of timeworlds, or 'Umwelts'.^{iv} Jakob von Uexküll (1921), J.T. Fraser (1982), and Jonathan Kramer (1988) (representing the respective disciplines of biology, philosophy, and musicology) show a line of evolving research concerned with species-specific temporal hierarchies and their interdisciplinary representation (see Table 2).

Table 2: Temporal hierarchies defined as umwelts

Temporal level		Analysis		
Von Uexküll		Fraser	Kramer	
Biological		Cognitive		Musical
Umwelt 1	Atemporal	Now	Concepts of past, present and future do not exist, nor do those of before and after	Vertical
Umwelt 2	Prototemporal	First time	Events are not necessarily simultaneous, but their temporal position is distinguished only statistically	Moment
Umwelt 3	Eotemporal	Cause/effect	Cause and effect, symmetrical	Symmetrical
Umwelt 4	Biotemporal	Starts/Ends	Distinguishes past, present, future Differentiates between beginnings and endings	Non-directed Linear
Umwelt 5	Nootemporal	Personal	Personal identity and free will Beginnings and endings remembered and anticipated	Linear
Umwelt 6	Sociotemporal	Cultural		Hyper linear

Sources: Von Uexküll (1957, pp. 28-9), Fraser (1982, p. 19), and Kramer (1988, pp. 394-7).

Table 2 demonstrates relationships of hierarchical levels between the biological theories of von Uexküll, the temporal theories of Fraser, and the musical interpretations of temporalities suggested by Kramer. Kramer has pointed out that theories of hierarchical temporality described by Fraser help us to understand musical concepts such as ‘vertical’ and non-linear (Kramer. 1988, p. 394).

The development of umwelt theory also reflects the development of an interdisciplinary aesthetic with possible implications for investigative methodologies. One such implication is that the study of tempomorphics may benefit from the use of models from more than one discipline. Further evidence supporting alternative evaluations of passing time reflects cultural values, establishing categories including

sacred, biological, and polychronic time is provided by Edward Hall (1984, p. 13). (See Table 1, p. 14).

The interest in temporal concepts has been seen as a characteristic of twentieth-century aesthetics. As James Gleick observes in Faster (1999, p. 7), aesthetic attention to the temporal dimension has dominated the twentieth century, as the eighteenth century concerned itself with the understanding of mass, and the nineteenth century is characterised by the spatial conquest of the globe. Perhaps reflecting advances in the physical sciences occasioned by Albert Einstein's theory of relativity, time in the 1900s has 'swept to the foreground of twentieth-century art' (Mitchell. 1963, p. 74).

It may be noted from these observations that twentieth-century performers and their audience share a developed awareness of temporality. However, because temporality is a cognitive phenomenon, any impact performance derives from temporal perception will be in the way the performer uses aesthetic language to inform his or her work, in addition to the prior aesthetic precepts of the audience. In his appraisal of perceptual hierarchies at work in Western art music, David Epstein has identified levels of beat and pulse, measure and motive, hypermeasure and phrase conveyed in through-composed musics, any and all of which require the presence of a conductor to aid ensemble performance (1995, pp. 29-35).

To conclude this brief survey of issues relating to the perception of temporality, we see a variety of contributing factors to the subject's perception of passing time in the experience of music. Social values and individual interpretation of information received aurally have been challenged and highlighted by works such as John Cage's '4' 33" (1976).

4.2.2 Musical developments

The identification of musical style (both established and innovative) depends on the aesthetic evaluation of the listener, and may be considered in the three areas Leonard Meyer has defined. These areas, according to Meyer, are distinguished as the sensuous, the associative-characterizing, and the syntactical (1967, p. 34). This three-part model translates as stimulating physical, social, and musical responses in the part of the listener. While, as Meyer goes on to point out, a given piece of music may emphasise one area and minimize the others (1967, p. 34), each area

combines with the others to contribute to the listener's enjoyment. The influence of Cage, in particular his requirement of the listener to reassess the aesthetic interpretation of music in society, foregrounds the importance of aesthetic interpretation.

It is necessary to address the resulting communication of meaning conveyed by a given example of music to the listener, noting that such meaning depends at least in part on an aesthetic interpretation on behalf of the audience. Two observations by composers of the twentieth century serve to remind us of the problems related to identifying meaning in music. Stravinsky's famous comment that music is 'powerless to express anything at all' (Griffiths. 1994, p. 63) serves as an answer to the question which, in Aaron Copland's opinion, 'should never have been asked' (1952, p. 13). Elsewhere the problems presented by the study of hearing are attributed to individual abilities of perception and cognition in the listener. The competence of the listener, including the 'sociology of taste', is challenged by the organisation of musical structure (Wellek. 1979, pp. 115-21). The point Wellek makes has similarities with that made by Ernst Gombrich regarding the 'innocent eye' and, to paraphrase the art historian, the share of the artwork taken by the beholder (Gombrich. 1968, p. 169).

Concluding this overview addressing issues of meaning in music, the importance of temporal issues in relation to the organisation of music (and the cognition of that organisation) is emphasised. According to Stravinsky, after refuting the musical power of expression, '[t]he phenomenon of music is given to us with the sole purpose of establishing an order in things, including, and particularly, the coordination between *man* and *time*,' (quoted in Griffiths. 1994, p. 63). Furthermore, in The Role of Timing Patterns in Recognition of Emotional Expression, it is argued that timing is often regarded as the most fundamental aspect of musical performance, in addition to the perceived operation of different hierarchical levels denoted by temporal patterns in music (Juslin and Madison. 1999, p. 197-221).

Changes in aesthetic interpretation of music in society discussed above have contributed to an emergent style of music-making, an example of which is 'Ambient' music, named by Brian Eno (1996, p. 293). Eno is quoted here to supply a description of cultural conditions giving rise to his style of ambient music:

In 1978 I released the first record which described itself as Ambient Music, a name I invented to describe an emerging musical style.

It happened like this. In the early seventies, more and more people were changing the way they were listening to music. Records and radio had been around long enough for the novelty to wear off, and people were wanting to make quite particular and sophisticated choices about what they played in their homes and workplaces, what kind of sonic mood they surrounded themselves with. [...] I was noticing that my friends and I were making and exchanging long cassettes of music chosen for its stillness, homogeneity, lack of surprises and, most of all, lack of variety. We wanted to use music in a different way – as part of the ambience of our lives – and we wanted it to be continuous, a surrounding. (Eno. 1996, p. 293)

The ambient style finds musical precedence in the early twentieth-century furniture music of Erik Satie and 'Les Six' (Griffiths. 1994, p. 68). Modern music, Griffiths tells us conveniently, commenced with Debussy's flute melody in his 'Prelude a 'L'après-midi d'un faun' (1892-4) (Griffiths. 1994, p. 4), while the origins of ambient music has been identified among the works of Mahler (Prendergast. 2001, p. 4). It is possible that the location of a future style of music in the work of a composer of the previous century reflects evidence supporting theories of the 'hermeneutic circle' as much as aesthetic and stylistic musical development.^v

One (perhaps the first) example of ambient music – Eno's Ambient 1: Music for airports – is a realisation of Debussy's concern with providing music for the century of the aeroplane (Prendergast. 2000, p. 3). The ethos of ambient music features elements Heinrich Schenker, in marked contrast to Debussy, suggests should be omitted from music:

The life of a motif is represented in an analogous way. The motif is led through various situations. At one time, its melodic character may be tested; at another time, a harmonic peculiarity must prove its valour in unaccustomed surroundings; a third time, again, the motif is subjected to some rhythmic change: in other words, the motif lives through its fate, like a personage in a drama. [...] Thus it is illicit, according to the laws of abbreviation, to present the motif in a situation which cannot contribute anything new to the clarification of its character. No composer could hope to reveal through

overloaded, complicated, and unessential matter what could be revealed by few, well-chosen, fatal moments in the life of a motif. It will be of no interest at all to hear how the motif, metaphorically speaking, makes its regular evening toilet, takes its regular lunch, etc. (Schenker. 1973, p. 13)

Schenker's emphasis here is on the syntactical representation of dramatic narrative. However, interdisciplinary aesthetics of the twentieth century developed the abandonment of narrative, producing, according to one observer, a style characterised by 'no texture, no drawing, no light, no space, no movement, no object, no subject, no symbol, no form...no pleasure, no pain' (Reinhardt, quoted by Polin. 1989, p. 226). This Minimalist style, especially in the promotion of a non-narrative aesthetic, underpins music composed and performed to function as a background to the regular toilet and lunch of the international traveller in the environment of the airport (Eno. 1996, p. 295).

In order to identify how performance technique has incorporated aesthetic considerations discussed above, it is necessary to define conventional performance. A recorded example of conventional performance displaying cultural text, instrumental virtuosity of the solo artist, the use of technology, and improvisation in performance is Jimi Hendrix's 'Star Spangled Banner' (1994). Comparison to performance models indicating requirements to achieve expression (resulting from research into artificial systems of emotional expression), provides a series of criteria aiding definition of performance. The performance model suggested by Clarke and Windsor (2000, pp. 277-313) specifies six components (see table 3).

Table 3: Performance model

<ul style="list-style-type: none">• A representation of structure• A performance procedure• An encoding function• A representation of position in the music (either metrical distance or time)• A set of structure variables• A set of style parameters
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Source: Clarke and Windsor. 2000, pp. 277-313

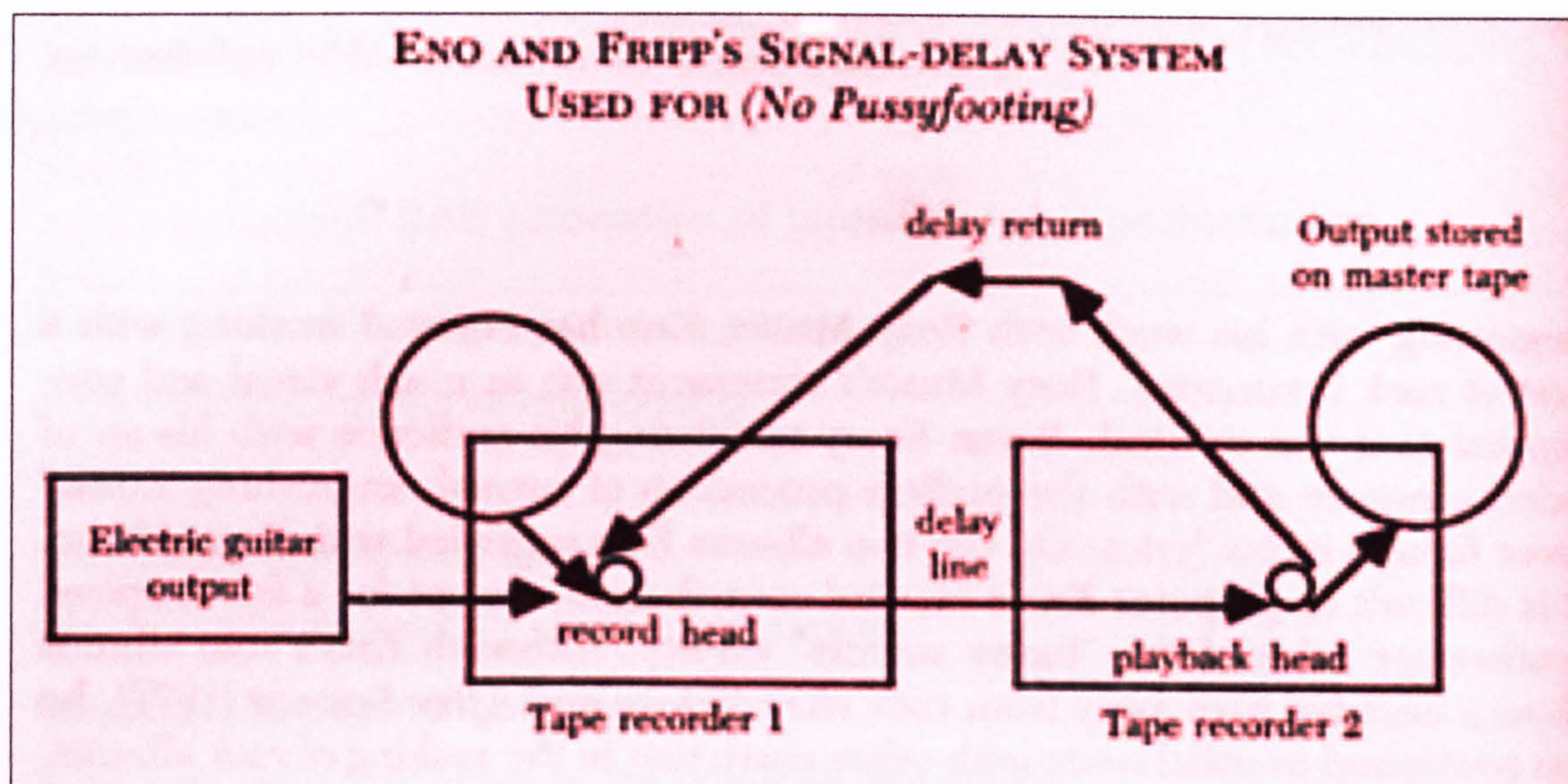
Hendrix's performance fulfils the necessary criteria listed in Clarke and Windsor's model. Structure is provided by the melodic and harmonic progress of the through-

composed anthem; performance procedure entails the musician, his instrument and attendant processing and amplifying devices in a concert situation; pitch, rhythm, and harmonic data are encoded in the manipulation of guitar strings; an underlying pulse is present in represented metre of the musical text; structure variables include exposition of text and improvisations arising from the text; and stylistic parameters are fulfilled by characteristics of the instrument used.

4.2.3 Adapted Performance

With the advent of technological developments, a style of musical activity has emerged which underpins the foundations for what is determined in this discussion as tempomorphic musical practice. This activity is a combination of technology and aesthetics reflected in Cage's observation that 'magnetic tape music makes it clear that we are in time itself, not in measures of two, three, or four or any other number' (1978, p. 70). Cage's observation perhaps refers to his own and others' work in the genre of *musique concrète*, but examples cited here are from the work of a subsequent generation of composers, indicating a clear developmental lineage. This lineage, reflecting an emergent compositional and performance style, has developed from the experimental tape loops of Steve Reich's 'It's Gonna Rain' (1966) and the introduction of 'Frippertronics' (No Pussyfooting Eno and Fripp. E.G. Records, 1973), to the digitally recorded soundscapes of The Gates of Paradise (Fripp. 1997). Each of these examples may be seen to have contributed to specific musical developments: Reich's compositional style including features of rhythmic phasing; the establishment of 'ambient music' (Eno. 1996, p. 293); and the development of soundscaping as a recorded performance process. An example of Frippertronics - a title chosen for its silliness, according to Fripp (LaFosse. 2002) - is to be found on Fripp's 'Water Music I' (Exposure, 1979), used in a *musique concrète* style to complement an overdubbed speech. The electro-acoustic process on which Frippertronics is based involves the introduction of a signal to a tape loop which is then repeated and added to by the performer, building sonic textures for an indefinite (and theoretically infinite) duration (see diagram 1).

Diagram 1: Tape loop schematic for Frippertronics



Source: Tamm. 1995, p. 152

The system illustrated by diagram 1 represents that which was used to achieve the repeated loops of Frippertronics found on such recordings as 'The Heavenly Music Corporation'. The overall harmony of 'The Heavenly Music Corporation', according to Eric Tamm's analysis, is pandiatonic (1995, p. 153). The resulting harmony from the performance process used by Fripp is, to use the Meyer's third term of analysis (see above), a syntactical characteristic of tempomorphic performance.

While this recorded performance process includes aspects of conventional improvisation and recording approaches, it may be possible to identify further defining characteristics describing a procedure that transcends either convention. The sensuous impact of 'The Heavenly Music Corporation' reflects criteria referred to by Eno in his description of a continuous music with no surprises. Aesthetic characteristics of the performance process involved in soundscaping are commented on by Robert Fripp:

Soundscape performances are part of an ongoing series of discovery which has the aim of finding ways in which intelligence and music, definition and discovery, courtesy and reciprocation may enter into the act of music for both musician and audience. (1997, p. 4)

A governing aesthetic relating to feedback loops between the performer and that performed is clear in Fripp's statement. Further specific issues it is necessary for the musician to address in soundscape performance arise from the opportunity for empirical evaluation and development of the work as it progresses. Features of

tempomorphic performance, including observed characteristics of soundscaping, are included in table 4.

Table 4: Characteristics of tempomorphic performance

<ul style="list-style-type: none">• Absence/reduction of performance ensemble• Antecedent/Consequent relationship• Cyclic• Emergent emphasis on texture• Emphasis on processing of recorded signal• Empirical development of composition• Free from metric structure in the conventional sense• Harmonically static/ Pandiatonic harmony• Holistic approach• Human and Technology• Immediacy of addresser/addressee feedback loop• Investing in one area of technology, with attendant possibility of obsolescence• Metric performance reactive not proactive• Non-teleological• Performance informed by (jazz) improvisation• Performer in a liminal position• Plasticity of (internal) form• Recordings do not depend on notation• Unique: Not repeatable except as manufactured duplication• Visual element of performance reduced
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Source: empirical observations of research (Doyle. ‘Definitions of Tempomorphic Performance’, 2002)

The following empirical observations, based on the findings of practical research, address each characteristic of tempomorphism and are briefly outlined following the order in which they appear in table 4.

- There is a marked reduction of performance ensemble personnel, characterised by a solo performer with the (possibly dispensable) attendant role of technician.
- The relationship between the antecedence of pitches committed to a loop and consequent performance decisions emphasises empiricism of the process in

conjunction with a specific, reduced, feedback duration.

- The repetition of looped information is inherently cyclic, invoking cyclic musical forms such as that of Gamelan.
- The emergent subject emphasis of looped music becomes that of tonal and harmonic texture.
- The subsequent processing of electro-acoustic signal shares a cognitive role equal to that of the original acoustic signal.
- Compositions are developed, in a single session, through a process of discrete empirical judgements by the performer, supporting the concept of the performer as audience member.
- Pieces are free from metric structure in the conventional sense, bars being replaced by hypermeasures determined by loop length.
- Although pieces can develop teleologically as the result of linear variations in texture and dynamics of volume, their harmony is essentially static, or vertical, with a tendency towards pandiatonism.
- A holistic approach is engendered in the performer as the result of antecedent and consequent relationship awareness. This approach may inform decision-making processes outside the immediate arena of technical musicianship.
- There is a clear emphasis on the interface between human and technology, and the creative potentials thereof.
- There is also an inherent immediacy of an addresser/addressee feedback loop, characterised by the performer occupying the cognitive space of the audience.
- Although several examples of looping processes are referred to, each may be seen to invest in one area of technology, be it analogue or digital, with an attendant possibility of obsolescence. The nature of equipment innovation, manufacture, and availability, results in the reinterpretation of creative process with each generation of technology. The process exploited by composer Conlon Nancarrow, making use of paper rolls for player-pianos, foreshadows the abandonment of tape loops for digital processing.^{vi} The obsolescence of technology effects the music produced, which adapts according to available equipment. Nancarrow's use of the player piano provides a precedent seen to some extent in the use and abandonment of Revox tape machines by Fripp.

- In contrast to conventional performance requirements, metric performance using loops is reactive not proactive (subsequent to initial decisions regarding loop length).
- Compositions are non-teleological in the conventional sense, offering the performer opportunities to explore vertical textures, but reflect, nevertheless, the inherent goal-orientation of unfolding time.
- Empirical decisions made during performance depend, for their execution, on technical ability and aesthetic awareness. Performances, therefore, are informed by a skill of improvisation perhaps closest to the tradition of improvisation in styles of jazz.
- The performer is in a liminal position, occupying the dual roles of sound addresser and addressee. This 'betwixt and between' position, identified as a characteristic of the liminal by Victor Turner (1990, pp. 11-12), is appended by the musician's position as being one which 'emphasises heterogeneity, innovation, the experimental and the marginalized' (Broadhurst. 1999, p. 10).
- Structural features depend on a single hierarchical unit (loop duration), adherence to which offers a plasticity of form which has similarities to the neoplasticism of the De Stijl movement, examples of which include the paintings of Piet Mondrian.
- Empirical improvisation recordings do not depend on notation, except perhaps in the form of schematics to describe signal processing (such as the schematic accompanying Eno's Discreet Music (1975) (See diagram 1). The absence of notation separates tempomorphic music from the minimalist style. Notation is unnecessary for reduced ensemble. Problems of graphic representation of recorded tempomorphic soundscapes may be partially addressed through the use of visual representation of digital audio, an example of which is found in the Bias Peak programme.
- Due to their improvisational nature, each piece has unique characteristics. Repeated performance is through manufactured duplication (e.g. compact disc) or by using the same system again.
- Visual elements of performance are reduced: the performer makes discrete contributions to the soundscape, giving the appearance of interrupted and discontinuous performance (a series of 'nows'); attention is directed towards

equipment rather than audience; alternative visual media (for example, the use of slide projection) may have limited meaning in relation to the musical piece developing.

Three concluding observations regarding tempomorphic performance refer to feedback immediacy, characteristics of computer-based music-making, and conventional performance technique. Firstly, a governing aspect of tempomorphic performance is that the performer listens to loops created, representing a shrinking of the addresser/addressee feedback loop. These observations regarding short-term empiricism have been made above, and are repeated here to emphasise their perceived impact on performance. Secondly, these characteristics stem from the particular temporal characteristics of looped information (a feature of computer sequencing), and find earlier precedent in Satie's proposed 'inconsequential' aesthetic of 'furniture music' (Griffiths. 1994, p. 68).^{vii} Thirdly, technical innovations complement established performance techniques to manipulate the perception of passing time such as rubato, wherein a performer 'steals time' from the metre in order to enhance the character of a phrase or passage. Rubato has been described as the 'mark of a living organism' (Scruton. 1997, p. 24). It is a characteristic of loop systems that the mark of a living organism is repeated with the precision of a machine.

4.3 Present: examples

The example of systems of music production using technological advances shows the advantages of empiricism, how we might view such systems in a wider aesthetic context, and implications for our perceptions of events. The use of empiricism to inform a system of compositional process is not unique, having an obvious application in the practice of conventional notation. The use of empiricism to inform decision-making afforded by certain electro-acoustic composition systems, such as that which Eno describes as 'Generative music', has been noted for this advantage (1996, p. 330). The interest in the creative potential of a given system, whereby the system becomes the artwork, has been observed as a factor linking artistic disciplines present in the work of Cage:

By concentrating on behaviour rather than results, and process rather than product, Cage had helped to create a basis for dialogue between all the arts,

a recognition that ideas held in common were more important than purely local differences of media. (Eno and Mills. 1986, p. 42)

Whether the artwork as process indicates a particular stylistic movement, such as Modernism or Postmodernism, is a matter for debate elsewhere. However, as Meyer has commented, the way of listening to a composition by one composer can be radically different to the way of listening required by another (1967, p. 87).

Composition and performance is facilitated by continuing technological developments making use of precise temporal sampling. This highlights our perception of a sampled event, and how we may refer to it depending on its context. Although an objective assessment of a digital sample may find that it is a stereo audio file with a 16-bit resolution lasting for 1.2 seconds, it might also be perceived subjectively as a fragment, moment, event, chord, or a holon (Koestler. 1968, p. 105).^{viii}

4.3.1 Tempomorphism In practice

A tempomorphic methodology may be observed in approaches to composition using looped sequences in programmes such as Emagic Logic, resulting in construction using a series of contrasting but contiguous measures. These measures, as a result of their size and the copy and paste features of computer software, provide holons influencing the overall dynamic structure of the piece.

Using the example of 'Bohemian Like You' (Taylor-Taylor. 2000), two copy and paste hypermeasure characteristics become apparent. The first characteristic has to do with the use of sampling to build structure, while the second emphasises sample content. The arrangement of 'Bohemian Like You' shows a structural reliance on hierarchies of looped metric hierarchies, or hypermeasures. The introduction to the song depends on a looped, African-sounding drum pattern for a statement of pulse and cultural location, which is then developed with a copy and paste expansion into a soundworld derivative of The Rolling Stones in the late-1960s. The development of an original Keith Richards riff (as the result of harmonic variation) reflects use of sampling to reinterpret previous material, such interpretation providing transposition of textual and cultural identity into a new context. This example, in addition to the wide variety of music software available and in use both domestically and

professionally, shows how the adoption of an approach to music-making based on repeated loops, or tempomorphism, is established practice in some areas.

The discussion here has focused on technological aspects of tempomorphic music-making rather than its performance. The impact of electro-acoustic music on performance suggests the need for an enhancement of visual aspects of a performance event. Aspects of electro-acoustic music in performance have been viewed as problematic, as, to suggest a hypothetical example, in an extreme situation the audience may simply bear witness to a performer pressing the start control of a tape-machine. Making reference to the electro-acoustic musics of Berio, Cage, Ligeti, Stockhausen, and Varèse, the following stipulates three disadvantages of such music in performance:

Perhaps the most crucial way in which electro-acoustic music disturbs the conventional processes of Western music is in its tendency either to remove or radically alter the role of the performer. The possibility inherent in this medium for a composer to deal directly with sound material, and to address his audience with only the mechanical and, ideally, neutral intermediary of a sound production system, was seen as an advantage, as is apparent in many of the views quoted earlier. But there are a number of counterbalancing disadvantages: (1) the lack of a visual element in the concert situation; (2) the lack of a sense of human effort and involvement; (3) the lack of the creative potential of the secondary process of interpretation, which in other music lends a desirable vitality and individuality to successive performances, including the unquantifiable but nevertheless important element of feedback between performer and audience which reinforces the transactional, ritualistic nature of the event. (Bridger. 1986, p. 46)

4.3.2 Practical research: Methodology

In order to generate practical research material addressing tempomorphic music-making, a heuristic methodology is developed using a model providing a starting point and guiding principle for music composition. The model is formed from three contributing factors, each stemming from personal perceptions of temporal, multidisciplinary, and musical aesthetics. These three factors are characterised by the terms 'hierarchical', 'plastic', and 'reductionist'.^{ix} The hierarchical factor derives

from the notion of temporal (and musical) hierarchies in general, and specifically the nested temporalities represented by the concepts of atemporal, eotemporal, prototemporal, biotemporal, nootemporal, and sociotemporal umwelts, as discussed above. The second factor of plasticism is borrowed from the orthogonal theories represented by the Dutch painter Mondrian in his neoplasticist work, wherein a basic principle of theoretic representation (vertical and horizontal lines and the exclusive use of primary colours) was used to explore textural balance in a visual medium. A late example of Mondrian's style is found in his painting of Broadway Boogie Woogie (1943-4) (see HPF fig. 25). The abstract style was developed by Mondrian as part of his adherence to the orthogonal theories suggested by Schoenmaekers at Laren in 1916 (Read. 1968, p. 197). The third factor of reductionism reflects aspects of Mondrian's principle, in addition to attempts to remove representational references characterised by the interdisciplinary Minimalist movement as found in the work of composers such as Reich, and the practice of soundscaping used by Fripp.

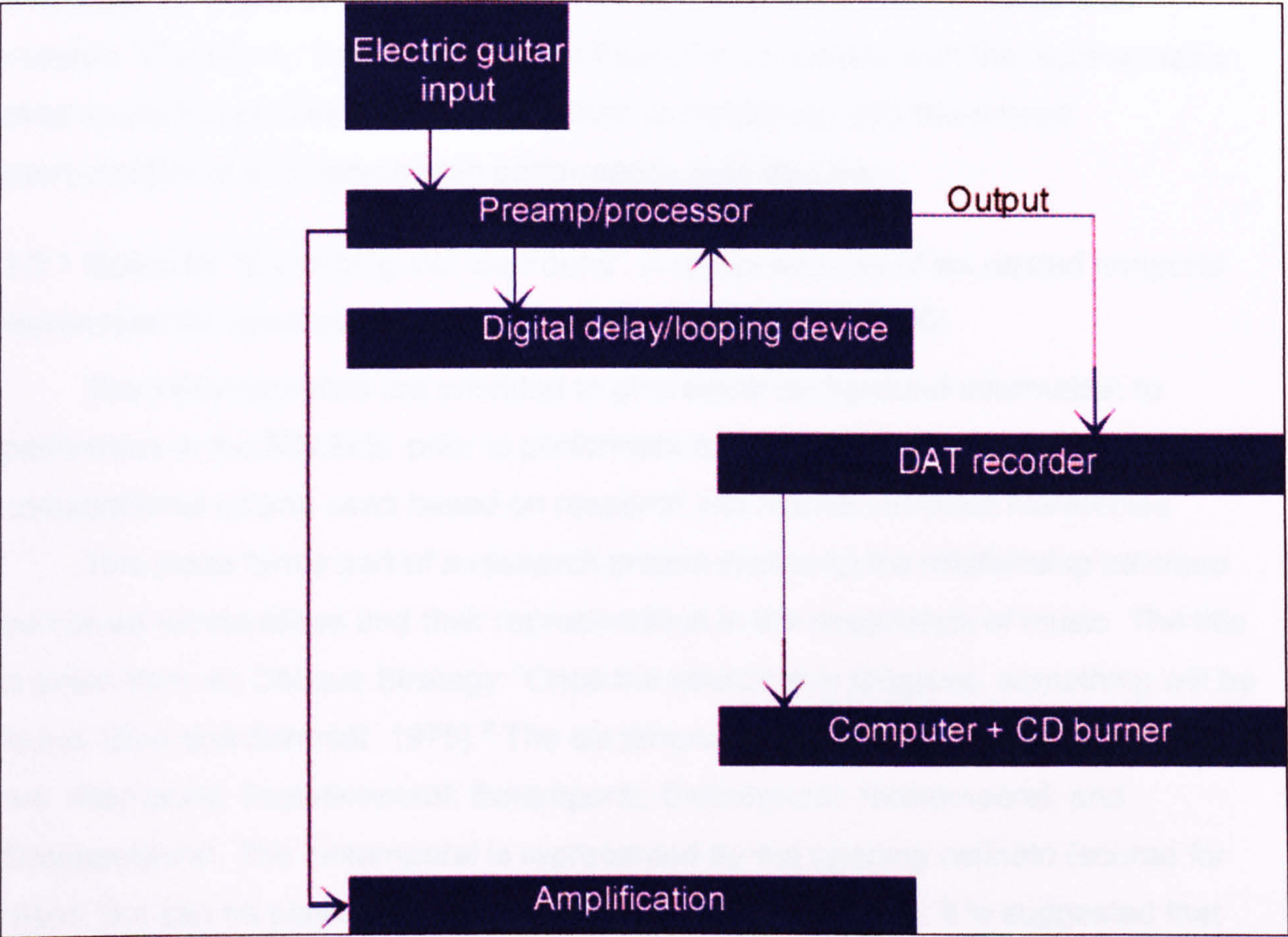
4.3.3 Practical research: Actions

Practical research for this investigation is divided into three categories: recordings, compositions, and performance. Firstly, recordings of tempomorphic soundscapes uses a process wherein an electric guitar is played to provide an electro-acoustic signal, processed by a preamplifier, sent via a send and return insert point to a digital looping device, recorded to Digital Audio Tape, and burned to compact disc (see diagram 2). This process is also executed with an additional stage of recording the amplified signal to multi-track tape to facilitate over-dubbing. The resulting CD of tempomorphic performances comprises three pieces: 'Tempomorphilation: metre made/delay piece/two loops/study/maybe/hypermeasure' (Doyle. 2002), 'Diminished space' (Doyle. 2002), and 'Bound' (Doyle. 2002).

'Tempomorphilation' is a compilation of tempomorphic studies. 'Metre Made', 'Study', and 'Hypermeasure' used analogue recording media. 'Delay Piece', 'Two Loops' and 'Maybe' were recorded direct to DAT. The six pieces are joined as the result of feedback received regarding initial recordings from Brunel music technology lecturer Ben Jarlett (see below). The word play in the title of the compilation is the result of reading McLuhan and Fore's The Medium is the Massage (1967). 'Metre Made' is a preconceived chord progression concerned with the use of a pivotal E

major 7th chord in the teleological sequence from the dominant B to tonic E. The additional exploration of texture offered by digital delay provided the ‘missing’ compositional element. ‘Delay Piece’ takes its title from the process used to perform it. Similarly, ‘Two Loops’ is a performance derived from improvising over a first and second loop, the second being determined by the length of the first, but containing different pitch-material. ‘Study’ is the result of performing while positioned between two amplifiers (with respective speakers), with microphones placed to achieve maximum separation of the signal appearing from each speaker.

Diagram 2: Tempomorphic performance system



‘Maybe’ explores the potential of a pre-composed cyclic riff. ‘Hypermeasure’ was recorded to analogue two-track (with a resulting feature of tape-compression) with the aim of exploring extensions of phrase and measure into hypermeasures as defined by Epstein (1995, pp. 29-35). ‘Diminished Space’ is the result of a performance concerned with the use of the tonality suggested by a diminished

chord, decided prior to performance. 'Bound' is concerned with maintaining an emergent timbral and textural position as the result of hearing the initial ostinato, fractured through a disparity between loop-length and ostinato phrase-length.

Secondly, compositions for the Brunel New Music Ensemble (B.N.M.E.) provide further research material for the investigation into tempomorphic performance. The nature of performance is subject to the provision of through-composed material in the form of two pieces: 'Something Will Be Found' (Doyle. 2000) and 'Metre Made' (Doyle. 2001). The composition process of these pieces are informed by results of research into nested temporal hierarchies and recording processes, and presented to players of the B.N.M.E. using conventional staff notation. Therefore, 'Something Will Be Found' is concerned with the representation of temporal hierarchies, while 'Metre Made' is concerned with the scored interpretation of a tempomorphic performance (see above).


2.3.1 Notes for 'Something Will Be Found': A representation of six nested temporal hierarchies for tuned percussion, strings and wind (Doyle. 2000)

The following notes are provided to give some background information to performers in the B.N.M.E. prior to performance, and illustrate aspects of compositional criteria used based on research into nested temporal hierarchies.

This piece forms part of a research project exploring the relationship between perceived temporalities and their representation in the experience of music. The title is taken from an Oblique Strategy: 'Once the search is in progress, something will be found' (Eno and Schmidt. 1975).^x The six temporal hierarchies reflected in this piece are: Atemporal; Prototemporal; Eotemporal; Biotemporal; Nootemporal; and Sociotemporal. The biotemporal is represented by the opening ostinato (scored for piano, but can be played on any tuned percussion instrument). It is suggested that any understanding of alternative temporalities will necessarily commence from the biological viewpoint of our species, and progress forwards (towards the sociotemporal) and backwards (towards the atemporal) from this bipedal point. An element of improvisation may prove interesting to include, based upon the rhythm of the biotemporal ostinato, between, for example, bars 65 and 91. This might be desirable to achieve additional textural and dynamic energy, as well as commitment in performance. Dynamics are to be decided during rehearsal. The representation of

six nested temporalities provide the underlying building blocks for this piece, and it is from these representations (especially the use of ‘nootemporal’ thirteen-bar cells) that an overall structure is derived. Each temporality is represented in the table below.

Table 5: Representation of six nested temporalities in 'Something will be found' (Doyle. 2000)

Atemporal	D
Prototemporal	D/E
Eotemporal	
Biotemporal	2 bar rhythmic motif : [daddadadaddadda]
Nootemporal	13 bar cells
Sociotemporal	Arpeggiated chords

Source: Composition notes. Doyle. 2000.

2.3.2 Notes on the composition of 'Metre Made' (Doyle. 2001).

An intention of this area of study is to gain assessment criteria through a process of comparative evaluation. This piece became the focus of a comparative methodology.

The tempomorphic composition of ‘Metre Made’ as a recorded performance from which was derived material for a through-composed piece for the B.N.M.E. reflects relationships of public and private time compositions in performance.

Issues arising from this process include the effect on the compositional development of a piece which acquired a dual identity as both a plastic composition and a realised score. A further issue involves the adaptation of material for use in situations with differing temporal criteria i.e. the recording of a unilateral performance in contrast with an ensemble of performers. This issue highlights the requirements of graphic representation to reflect temporal values, specifically to support a number of individuals operating by necessity in a shared temporality. The composition of this piece provides areas for personal reflection regarding such issues as the problematic area of assessing the temporal perceptions of the performer(s); the awareness of public time represented by focus of repeated simple metre, shared and contributed to by individual instruments; and observed differences between social (and therefore public) factors surrounding and dictating

aspects of a piece for ensemble, compared with the temporalities of a single individual. My empirical conclusions regarding a perceived 'shared awareness' of public time focus on the role of the conductor, which in turn relate to perceived differences between conducted public time for the ensemble and clock time. Further reflection suggests the possibility of substituting the ensemble for the individual.

Questions specific to the performance of *Metre Made* could be addressed, such as with regard to the repeated ostinato in the piano part: conceived to fulfil the role of a contiguous, separate temporality emergent from shared temporality – public time – of the piece, operating parallel to and independently of the metric 'body'. Does the operation of this emergent temporality impact on the performance of members of the ensemble, and if so, how does this impact manifest itself? Does an impact take place in the performance of particular individuals? If an error occurs in the performance of the individual part's metric value, how much is this attributable to the emergent contiguous temporality?

At the time of writing this survey, performers of the B.N.M.E. have not been addressed with these questions, although there is some evidence of individual response to performance issues available in audio recordings of performances, awaiting analysis. A method of appraising individual responses among performers, for example using a questionnaire, has yet to be formulated and executed, and is likely to encounter problems of interpretation in the part of both the addresser and the addressee.

The question as to how much a performer may be identified as separate from an audience member at any stage in the performance process may result in the placement of the performer in the position of the 'ultimate' audience. Some findings point to the roles of performer and audience as sharing the same process (Edwards. 1997, p. 19), precluding the necessity for a survey of the temporal perceptions of performers.

Finally, live performance generates research material concerned with addressing such issues as the visual interpretation of tempomorphic procedure. The use of guitar and processing equipment is appended with the addition of a slide projector (Liminal conference. Twickenham, 2000). For this event, 43 transparencies are used, featuring portraits, each slide being shown for ten seconds before being changed by a technician. The additional 'human factor' of portraits and the

technician's judgement of projection timings are perceived to have an impact on syntactical performance by the practitioner (myself). The recording of the performance on video tape affords subsequent empirical evaluation. The liminal position of myself as combined performer and audience is apparent from the images captured on video, as, in near-darkness, I share the audience view of projected slides from a comparative perspective with the audience represented by the video camera. The convention of improvisation is more evident in this performance, where the placement of the performer in surroundings alternate to those dedicated to the processing of audio signals brings additional factors to the event. Signal volume, for example, is judged according to spatial acoustic considerations rather than to facilitate optimum recording levels. An emphasis on the representation of a given temporal hierarchy, such as the prototemporal, is replaced with an awareness of representing the temporality of the current event in relation to the projected image, and the subjective performance response to that image. The possibility of rejecting the performance (an option available when evaluating recordings for processing to CD) is removed, resulting in the presence of a tension absent from an event without an immediate external audience.

4.3.4 Practical research: Initial observations

Recordings of tempomorphic performances were played to Ben Jarlett, who commented on the presence of noise as the result of analogue media (particularly noticeable in comparison to digital recordings) and suggested tape noise has an impact on aesthetic evaluations of recordings. In order to reduce the perceived impact of comparative noise textures, crossfading between pieces was suggested, to disguise characteristics of noise from one piece to the next. The result is a single hypermeasure comprised of six discrete events ('Tempomorphilation'), as has been described above.

Performances of compositions by the B.N.M.E. reflect issues related to conventional performance practice. This practice includes a dependence on rehearsal time for the ensemble, the interpretation of text, communication between members, and 'aleatoric' compositional results of interpretation, not necessarily a direct result of the composer's intention. Feedback loops between the composer and performer/s, the composer and the audience, the performers and the audience, are

each of conventional and, in comparison to tempomorphic feedback, extended length.

The tempomorphic performance at the Liminal conference (Twickenham, 2000) used slide projections to enhance visual aspects of performance. Video recordings of the event demonstrate what might be interpreted as a 'minimal effort' on behalf of the performer, underpinning Bridger's observation regarding the 'lack of a sense of human effort and involvement' in performance observed by the audiences of electro-acoustic musics (Bridger. 1986, p. 46). Issues relating to the provision of visual information intended to complement and enhance live tempomorphic performance suggest an area of further research investigation, and are discussed below.

4.3.5 Actions to be considered

Further research actions to be considered include the exploration of granular synthesis programming for audio recordings, and the exploration of visual enhancement techniques for live performance. The possibility of manipulating pre-recorded soundscapes to complement, for example, improvised physical performance such as that explored by Optik^{xi} through live granular synthesis offers an additional area of potential tempomorphic research. Similarly, a further area of tempomorphic research is offered by the investigation of techniques to explore visual enhancement of live tempomorphic performance such as the use of motion tracking systems.^{xii} Contributing factors to such a research project are perceived to include: the selection of visual medium (such as analogue or digital); synchronisation possibilities; the content of visual data; and the potential role of feedback to the performer of visual data with an attendant impact on the empirical performance and composition process. The provision of compositions for the B.N.M.E. using alternative score methodologies with the aim of increased improvisational input by ensemble performers offers a third area for continuing research into tempomorphic performance.

4.3.6 Empirical observation of tempomorphic performance practice

Each performance commences with a decision defining the loop length to be used. The action to define a loop length consists of depressing either a footswitch or button twice, the first time to start the loop, the second time to end it. The temporal

duration between these actions always appears different, either shorter or longer, to the temporal impression gained after committing the first sound to the loop. The perceived 'risk factor' inherent in this operation supplies an initial tension to the performance which has some relationship with a sense of beginning, and lasts, with decreasing effect, sometimes to the end of the piece, depending on perceptions of emerging form. Retaining an open-minded approach to events, allowing a balance between that which is heard and that which is played (similar to a sense of 'being'), evokes an aesthetic approach closer to improvisation than composition. A balance is sought between 'being' and 'becoming'. These terms are used here in the sense defined by Kramer when he describes umwelt theory as distinguishing evolutionary levels of time. The lower levels reflect concerns of '*being* – with the unchangeable, with the eternal - while the upper levels involve *becoming*, the changeable and the temporal' (Kramer. 1988, p. 394).

As pieces evolve, concern may focus on providing weight to the soundscape, in the form of lower pitched tones, or multiple voicings of mid-range clusters, or on extending and framing a particular motive, frequently of higher pitch. A preliminary empirical conclusion from the results of practical research suggests that music composed focussing on looped temporal elements becomes music featuring textural colour. This appears to be true both for tempomorphic recordings and compositions for the B.N.M.E.

4.4 Future: Implications

To conclude this survey, I would like to provide an evaluation of findings: a review of cognitive impact on performance; comments on emergent sociotemporal features of the twentieth century; problems of atemporality; and aesthetic implications of temporal awareness.

4.4.1 Evaluation of findings

The question of how research data is gathered from performers to provide records of private time experiences for comparative evaluation points to an area for further investigation elsewhere. The necessity for such research may in turn be based on the perceived validity of the outcome. The validity of such a data-gathering exercise could be argued for from a heuristic viewpoint, and, equally, contested by

an argument supporting methodological solipsism (Borst. 1993, pp. 485-6). An argument for methodological solipsism lends validity to the observations of a single participant in a tempomorphic performance study, such as my own notes on various stages of research. The empirical observations expressed in this survey, therefore, find validation as methodological solipsist findings, dependent as they are on a subjective perception of issues and their perceived impact on the course of research. Conclusions regarding constituent characteristics of tempomorphic performance have been stipulated earlier (see p. 93), resulting in twenty identified aspects of what is perceived as an emergent performance practice, featuring a governing aspect of short-term empiricism.

4.4.2 Review of cognitive impact on performance

Definitions of tempomorphic performance have proven to depend on the perception of tempomorphism and alternative temporalities by the performer. Given that temporality is a cognitive phenomenon, the impact on performance derived from temporal perception is in the way the performer uses aesthetic language to inform his work. In addition to these conclusions, I suggest tempomorphic perception offers a model for a universal listening strategy, in addition to (or conceivably in place of) interpretative strategies dependent upon stylistic and cultural foreknowledge. Accepting the interpretation of musical works as soundscapes, the perceived evocation of a temporal umwelt by that soundscape is the result of a tempomorphic process in the part of the subject.

4.4.3 Comments on emergent sociotemporal features of the twentieth century

It is the adoption of innovative listening strategies which has led to such statements as those made by Prendergast, wherein ambient music has been described as the classical music of the future (2000, p. 4). The development of 'listening strategies' reflects a widening awareness of self and the social context within which the self operates, which in turn is a feature of aesthetic development in the twentieth century. In an appraisal of the development of philosophy, for example, Alfred Ayer points to self-consciousness as a characteristic of the twentieth century (1984, p. 14). Developments of listening strategies or self-consciousness among

writers of philosophical tracts operate, as we have seen, in the *umwelt* of the sociotemporal, as indeed does the developed awareness of temporality shared by twentieth-century performers and their audience.

4.4.4 Problems of atemporality

It is the representation and perception of atemporality – the absence of time – in the experience of musical performance that has proved most difficult to establish in this survey. An analogy of this challenge - the musical representation of time without movement - is found in Jasper Johns' concern with the back of the picture: 'One of the extreme problems of paintings as objects is the other side - the back. It can't be solved; it's in the nature of the work' (Rosenthal. 1989, pp. 115-17). One conclusion to be drawn from Johns' statement is that representations of temporality through music must at some stage confront, as those concerned with other media must confront, the aesthetic problem of the medium, which in the case of music is time.

However, the success with which the temporal art can depict atemporal, or non-moving, time (dependent, as the perception of non-moving time is, on the perceptions of the beholder) may come through an evocation of the atemporal *umwelt*. It is atemporality which is described by Kramer when he defines vertical music as 'a holistic music that offers a timeless temporal continuum, in which the linear interrelationships between past, present, and future are suspended' (1988, p. 387). The possibility of evoking atemporality is further supported by the view that time unfolds at the speed at which information is processed (Barry. 1990, p. 165), suggesting that limited, repeated information requires little processing and therefore, according to this theory, results in a perceived reduction in the unfolding speed of time. An alternative theory indicating the possibility of atemporality in the experience of music is found in the view of Robin George Collingwood, suggesting that music as a 'work of art' may exist 'solely in the musician's head' (Ayer. 1984, p. 195).

4.4.5 Aesthetic Implications of temporal awareness

Final observations of this investigation into definitions of tempomorphic performance concern two implications of feedback available to the performer at the interface between the participant and the technology in use to provide a loop

system. Firstly, the increased speed of feedback for the tempomorphic performer making use of looping systems reflects the increase in speed of daily communication for the individual in a technological society. This increase in speed shows how the sociotemporal Umwelt is subject to an evolutionary process. Secondly, the implications of antecedent- and consequent-action relationships are reflected in the recorded outcome of tempomorphic performance. Each action represents a decision for which the performer is responsible. The consequences of actions find a wider application as described by Eno in 'The Big Here and the Long Now' (1978). The empirical findings of practical research, underpinned by an investigation of temporal hierarchies, are mirrored in Eno's observation regarding perceptions of 'Now': 'The Long Now is the recognition that the precise moment you're in grows out of the past and is a seed for the future. The longer your sense of Now, the more past and future it includes' (2002).

4.5 Conclusion

Tempomorphic performance offers the participant an alternative subjective time world with an extended sense of 'now' due to the emphasised relationship between antecedence and consequence. Possibilities of exploitation offered by rhythmic, melodic, and harmonic variation and development are reduced and in part substituted with an enhanced sense of 'becoming' and 'being'. This alternative time world evokes, as Kramer has observed about involvement in the performance and audition of music, a sacred time in the sense referred to by Hall (Kramer. 1988, p. 17).

Findings of research regarding individual and cultural concepts of temporality suggest alternative criteria of temporal measurement are to be found in variances between time experienced by the individual and time perceived by the immediate culture within which the individual operates (Kramer. 1988, p. 15; Hall. 1984, p. 13). The inclusion of cultural criteria in the evaluation of the area of research necessitates a broad field of interdisciplinary study. Music-making, dependent upon perceptions of temporality for its operation, reflects multiple temporalities such as the representation of pattern against suggested pulse (in syntactical terms), as well

as associative-characterizing languages associating certain music with specific styles for the participant (Meyer. 1967, p. 34).

Research actions have underpinned a perceived complementary relationship between music and time, evident in the composition of music using criteria of a perceived temporal nature resulting in the generation of musics for a variety of media, dependant on the relationships of syntax, culture, and individual interpretation ('Metre Made', Doyle. 2001). Findings of this investigation are subject to interpretation from a musicological perspective, while acknowledging Heidegger, who has suggested that the search for a specific will result in data relative to that specific, according to perceptions of the individual subject (1995, p. 275).

Tempomorphic performance characteristics have been compared to a model of 'conventional' performance, although perception of a given style of an art form is arguably dependant upon the foreknowledge of the perceiver, or the 'share of the beholder' (Gombrich. 1968, p. 169). One musical (and interdisciplinary) style foregrounded by research is that of Minimalism, representing an evolving stylistic movement underpinning musical developments of the late twentieth century: 'As Terry Riley observed, the restless inquietude of European avant-garde music had never been able to give the world those moments of peace which were its greatest current need' (Polin. 1989, p. 229). The minimalist nature of the tempomorphic musical form, featuring an absence of conventional variation and development, serves to reaffirm Cage's observation, quoted once again, regarding music recorded on magnetic audio tape, that 'we are not in measures of two, three, four or any other number, but in time itself' (1976, p. 70)

ⁱ The use of the term tempomorphic (literally 'timechanging') to refer to the study of varieties of perceived temporalities, or forms of time, reflects terminology used in other disciplines, such as the investigation of land forms, and referred to as geomorphic study.

ⁱⁱ The relationship between time and perception is identified by Fraisse as relating to the perception of order: 'Rhythm is the perception of order. One of the perceptual aspects of rhythmic organization is tempo. It can be lively or slow. It corresponds to the number of perceived elements per unit time, or to the absolute duration of the different values of the durations. Evidently, one passed from a definition based on frequency to a perception based on duration. We will use both of them. The possibility of rhythmic perception depends on tempo, because the organization of succession into perceptible patterns is largely determined by the law of proximity. When the tempo slows down too much, the rhythm and also the melody disappear.' (1982, p.151)

ⁱⁱⁱ See, for example, Scruton (1997) for a discussion of matters relating to aesthetics and music, wherein the distinction is made early in the debate between that which is material and that which is intentional (p. 4).

^{iv} For a comprehensive appraisal of species-specific temporal universes, defined as 'Umwelts', see Von Uexküll (1957)

^v In a hermeneutic circle, Heidegger proposes, the participant's foreknowledge of characteristics effects observations made by the participant to the extent that in knowing certain characteristics, defining aspects of those characteristics will be found by the participant in that which is observed. Heidegger writes in *Being and Time*: 'Ontological investigation is a possible kind of interpreting, which we have described as the working-out and appropriation of an understanding. Every interpretation has its fore-having, its fore-sight, and its fore-conception. If such an interpretation, as Interpretation, becomes an explicit task for research, then the totality of these 'presuppositions' (which we call the hermeneutical Situation) needs to be clarified and made secure beforehand, both in a basic experience of the 'object' to be disclosed, and in terms of such an experience.' (1995, p.275)

^{vi} See Griffiths (1994) for further information on Nancarrow.

^{vii} This music was realised by Honegger, Poulenc and Milhaud, members of 'Les Six', with works such as 'Musique d'ameublement'.

^{viii} 'A holon is a more or less separable entity or event that forms part of a hierarchic structure. For instance, a motive would be a holon on a low level; a theme would be one on a higher level.'

^{ix} Hierarchical, plastic, and reductionist are used here as respectively defining concepts of nested perceptually prioritised levels (as of temporality), adaptable characteristics regarding the generation of form, and the applied reduction of component parts of a form.

^x 'Oblique Strategies' is the title given to a set of cards, each bearing an aphorism to be applied in a creative situation at the user's discretion. 'The deck, which Eno developed and produced in collaboration with his painter friend Peter Schmidt, is a set of oracle cards modelled philosophically on the ancient Chinese *I Ching*, or Book of *Changes*.' (Tamm. 1995, p.77)

^{xi} Further information on Optik and motion tracking research is available at: Body, Space and Technology <<http://www.brunel.ac.uk/depts/pfa/bstjournal/1no12/journal1no2.htm>>

xii Broadhurst, Susan. 'Interaction, Reaction and Performance: The human body tracking project' Body, Space and Technology, 2, June 2001

<<http://www.brunel.ac.uk/depts/pfa/bstjournal/1no12/journal1no2.htm>>

Chapter 5: Conclusion

5.1 Introduction: review of hypotheses

If there is a single question addressed by the foregoing study of music and time, it is why does vertical music work? The question 'why?' has necessarily led to addressing 'how' and 'when' vertical music functions. The investigation has set out to argue that musical verticality indicates nested temporalities in perceived experience of music, and that these phenomena contribute to the duality described as tempomorphism.

Attendant queries to be addressed include the necessity of defining relationships between temporal perceptions, of which verticality is but one; the definition of vertical music in comparison and contrast to other kinds of music; the choice of analytic method; a survey of the development of vertical music; characteristics of criteria by which such music may be judged to succeed, and how vertical music functions in performance, composition and audition.

These issues, at the start of the investigation, were to be addressed with four initial hypotheses. Firstly, that aesthetic considerations impacting on the subject of musical temporality are supplied by global and musical concepts of time (discussed in chapter 2, 'Concepts of Time'). Secondly, in addition to issues relating to evolving musical style, technical perspectives of music polarise between theory and emergent technology respectively, and form a feedback loop, as discussed in chapter 3, 'Concepts of Time in Music'. Thirdly, that performance issues (impacting on any practical research undertaken) feature aspects of improvisation and structure, as discussed in chapter 4, 'Definitions of Tempomorphic Performance'. Fourthly, compositional issues should be addressed using the empirical findings of a practical research element in the investigation, with further confirmation from extant examples suggested in the course of research.

A description of emergent hypotheses has been added to the initial hypotheses. Therefore, in the fifth category, reflections on the survey are gathered into areas denoting achievement and those felt to be problematic. In the sixth category, implications of findings and points of departure for further study provide subdivisions focusing on moving images, holistic impact, further research and practice. The

seventh category of the chapter constitutes a final analysis of the survey, summing up key points arising between the investigative findings and the initial motivational query.

An additional factor in the research scenario was afforded by teaching music to secondary school students. The experience supplied a reminder of music as a vibrant contributive element to youth culture. It also supplied instances which could be turned to the advantage of the research project in that material for empirical evaluation was provided. The two instances referred to in this survey are 'A Day in the Life' and, to a lesser extent, 'The Turn of the Screw' student workshops.

5.2 *Aesthetic considerations*

Aesthetic considerations are, having reached the evaluative stage, the sensibilities and criteria drawn from chapter 2, 'Concepts of Time'. Having completed the main body of the survey, it is apparent that the subdivisions of the second chapter - culture, philosophy etc. - served to inform a 'general aesthetic of temporal issues', and perhaps should have been so named. At this evaluative stage, three categories for the grouping of findings relating to concepts of time have suggested themselves as possessing 'global', 'musical' and 'stylistic' characteristics.

Having established the nature of physical time as one which is based on the laws of thermodynamics, investigative attention was focussed on perception of temporal phenomena. The phenomena of particular interest proved to be the presence of multiple temporal hierarchies, with an attendant factor of nesting, so that one kind of time can be thought of as including, or contributing to, other kinds of time. A tool for the evaluation of multiple and nested temporalities has been established in chapter 2 using the concept of *umwelts*. The different levels of nested hierarchies described in the theory of *umwelts* are parallel in certain respects to musical structures: within a phrase is nested bars, within which nest rhythmic groupings comprised of notes and rests (see appendix 2). The introduction of the theory of *umwelts* into the discipline of music provides an additional terminology (to that of established convention) with which to investigate musical phenomena. Reviewing the ideas developed by von Uexküll, Fraser and Kramer, there are six *umwelts*, each describing a nested temporal level (see appendix 5). A description of atemporal,

eotemporal, prototemporal, biotemporal, nootemporal and sociotemporal characteristics becomes available to inform an analysis emphasising temporal sensibilities.

To review characteristics of each umwelt, with examples: the tool of analysis, being a proposition, is atemporal, akin to the assertion (according to the 'orthodox interpretation of Aristotle's discussion') that $2 + 2 = 4$ and is an atemporal or achronological proposition (Rescher. 1968. pp. 84-85). A recent viewing of Master and Commander, a seafaring adventure, in which the ship and crew are becalmed and endure a life-threatening period of stasis, served as a reminder of prototemporality, the nested temporality of the disembodied moment. Similarly, the incidence of repetition serves as an example of the eotemporal umwelt: the event, such as a sample, has an identifiable temporal character and direction, without indicating the broader narrative of teleological sequence. Skipping a level (momentarily) in this review and moving from the third (eotemporal) umwelt to the fifth (nootemporal) umwelt is characterised by the development of an objective methodology of descriptive identification of objects by dating or timing (an event can be defined non-subjectively by its temporal point of commencement and subsequent duration of process). The biotemporal and sociotemporal umwelts are present when considering the rhythmic tempo achieved by an ensemble of individual performers. The internal (biotemporal) rhythm of the individual performer contributes to the communal (sociotemporal) process of playing in time. The relationship between the biotemporal rhythms of the process and sociotemporal rhythms of the contextual environment (although mediated by the nootemporal characteristics of intellectual control) are relative and variable depending on perceptions of the observer/participant, and provide inconclusive evidence for evaluation, except in providing an example of nested temporality.

This is an empirical evaluation drawn from practical research, informed by the analytical language afforded by the nested temporality theory of umwelts (see evaluation of Brunel NME performance, chapter 4). This in turn underpins the view that multidisciplinary sensibilities and terminology inform analysis and debate.

5.2.1 Global

The appeal of vertical music to the international community is reflected in the term used in France for soundscapes: *paysage sonore*. In Germany, vertical music as compositional praxis is evident in Karlheinz Stockhausen's 'uncompromisingly vertical' *Stimmung*. (Kramer. 1988, p. 386).

To understand the heritage of this emergent musical style, it is useful to plot the parallel development of another, newer, artform. In the course of the 1900s, two art forms developed in the Western world as a direct consequence of technological innovation. Photography, on the one hand, progressed from the initial findings of its Victorian inventors, and thrived with the global development of a mass media, while electro-acoustic recorded music, on the other hand, had a chronologically subsequent beginning, only really taking off with magnetic tape technology established during the second world war, culminating in Pierre Schaeffer's definition of *Musique Concrète*. These two art forms stand at opposite poles of temporal representation, but have both served to forge temporal process into an artefact. Photography captures the split second of the event, a smaller chronon than our psychological sense of a moment (3 seconds), while recorded music - similarly of a finite temporal duration captures an alternative temporal *umwelt*, frequently of sequential chronons, but always accessed in and through the passage of physical time.

In his appraisal of the impact of the loudspeaker, Robert Worby makes the point that photography and sound recording are roughly contemporaneous technology of the second half of the 19th century, rooted in industrial thinking, invented and developed for commercial, documentary purposes, not for artistic pursuits (Guardian, 24:04:04). Worby also points out that there are parallels between the advance in use of photography and the development of Abstract Expressionism in New York in the 1950s, a movement which reflects the exploration of dissonance. Similarities between the photograph and a sound recording are summed up by Worby as capturing something that was fleeting, evanescent and transitory and turned it into a thing, an artefact. The observation that with the impact made by recording and photography, time itself became an artefact, may prove to have implications for any artform represented in a process rather than an end product. The points made here regarding contrasting and comparative characteristics of

photography and recorded music serve to underpin the place of music in the infrastructure of Western art culture, but more than this, they highlight music's unique characteristic to offer the observer/participant an extended chosen nested hierarchical moment. Comparison with the photograph emphasises that aspect of the artefact, photographed or recorded, which is hyper-real, inviting the observer to believe in the reality of the captured moment split-second or extended despite the evident circumstance that neither photograph nor sound recording are real. The belief may be applied to both forms of artefact, but it is the musical document which expresses and demands engagement in temporal movement, however fast or slow that may be. Indeed, the stillness of movement evoked by vertical time pieces the third section of Adams Shaker Loops, for example serves to emphasise normal temporal movement by the process of diverting attention from public time, the return to which establishes its characteristic movement all the more.

5.2.2 Musical

The findings of chapter 3 point to the cultural cross-fertilisation of musical and temporal ideas, including examples of their effects on emergent Western music. Concepts of teleological, cyclic and vertical music have been established in this overview of concepts of time in music. Viewing these three terms from a chronological perspective, we can equate 'teleological' with Western classical music, 'circular' with that period characterised by the works of Debussy, Stravinsky and Schoenberg, and 'vertical' for pieces generated using modern digital and recording technology. See below, 'Representing non-movement in a time-based medium', and 'Evolving trios' (appendix 12).

5.2.3 Stylistic

In the course of the investigation, a recurrent theme among practitioners from different disciplines is the search for universal criteria. One such universal, foreshadowing and then succumbing to a popular acceptance of oriental values, is the criteria of the orthogonal, which can be traced as an antecedent of minimalism. The universal orthogonal law is that described as providing the underlying principles of the European De Stijl movement:

As the Dutch art historian H. L. C. Jaffé has stated, it must be acknowledged that it was Schoenmaekers who virtually formulated the plastic and philosophical principles of the De Stijl movement when, in his book *The New Image of the World*, he referred to the cosmic pre-eminence of the orthogonal as follows: 'the two fundamental complete contraries which shape our earth are: the horizontal line of power, that is the course of the earth around the sun, and the vertical, profoundly spatial movement of rays that originates in the centre of the sun' [...] and again later in the same work he wrote of the de Stijl primary colour system: 'the three principle colours are essentially, yellow, blue and red. They are the only colours existing... yellow is the movement of the ray [...] Blue is the contrasting colour to yellow [...] As a colour, blue is the firmament, it is line, horizontality. Red is the mating of yellow and blue [...] Yellow radiates, blue "recedes", and red floats'. (Frampton. 1994, p. 142)

The application of such a set of criteria has been formative in the development of a methodology for practical research in this project. Read (1968. pp. 196-7) cites Mondrian's 'passionate search for the plastic equivalent of a universal truth' as the reason for the artist's influence. The impact of orthogonal universal laws have been noted on the development of the architect behind the Philips Pavilion, the structure which engendered *Poème électronique*: 'Although Le Corbusier balanced the straight and the curved line in his purist paintings, in the world of his early architecture the orthogonal prevailed' (Treib. pp. 23-4).

The impact of Mondrian's plasticism on American music is apparent in the pre-minimalist graphic scores of Earle Brown:

Earle Brown produced graphic scores in the early Fifties in America, one of his main influences being the work of artists in New York in the post-war years. The origin of Brown's artistic influences really goes further back to the 'art of determined relations' or 'constructivism' of an earlier European period, and there is a distinct resemblance between some of his scores and certain pictures of Piet Mondrian, Bart van der Leek, Gerrit Rietveld, and (later) Victor Pasmore and Fritz Glarner. (Brindle. 1987, p. 89)

The development of the sensibilities of neo-plasticism into those defining minimalism marks the end of one stage of stylistic development, and the start of another: 'The Minimalists shared with Mondrian the belief that a work of art should be completely conceived by the mind before its execution. [...] In many ways, Minimalism received its initial impetus from painting...' (Gablik. 1994, p. 245). In her review of factors contributing to minimalism, Suzi Gablik looks back to another formative influence:

Writing in 1965 on the new art, Barbara Rose had linked Minimalism not only with the renunciations of Malevich but also with those of Duchamp, whose ideas were, indeed, critical to the development of the Minimalist ethic. The importance of Duchamp in this regard had to do with how readymades challenged the prestige in our aesthetic thinking of the notion of work as an essential ingredient in art. By proposing a urinal and a bottlerack as examples of 'readymade' art, Duchamp had minimised the role of the artist's hand as well as the value of artistic craftsmanship. (Gablik. 1994, p. 248)

In research prior to this investigation, a link was established between the paintings of Piet Mondrian and the musical style of boogie woogie (Doyle. Middlesex, 1999). The findings of this survey have further emphasised the links between music and this Dutch painter.

In further consideration of a criteria which can be universally applied, the following hypothesis has emerged in the course of research: A six-stage argument to portray the impact of temporal recognition in a developing style in music is based on ideas of i) recognition, ii) patterning, iii) time frames, iv) the beholder's share, v) concepts of musical movement, and vi) innovative exposure to increased durations. Psychological involvement with an artwork takes place depending on the participant's ability to become involved - to recognise points of reference. This depends on the efficacy of that artwork whether music, film, prose, dance, or sculpture, to supply an alternative temporal umwelt in patterns recognisable to the observer. Of the observer's ability, the 10 per cent able recognise pattern (rather than the 90 per cent aware of the artwork's market value: see Ramachandran's 'The

Artful Brain', appendix 11), if informed with a temporal language to, will perceive characteristics of specific umwelts. An analogy for this argument substitutes time for beauty in the eye of the beholder, resulting in an artefact for which time is in the eye of the beholder, and succeeds or fails because of the success or failure of characteristics of the time beheld. Doob has described three time frames in any artwork: the duration of manufacture, the duration of performance, and the duration of audition. The third of these time frames is addressed by time being in the eye of the beholder. The art historian Ernst Gombrich has referred to the part played by the audience in the consummation of an artwork as being the 'beholders share' (1968, p. 169).

The argument and concurrent investigation into the psychological beholding of temporal perception is not necessarily restricted to the consideration of musical works, but is multidisciplinary. It is a particularly musical problem, however, to consider how to evoke temporal stillness as a problem of composition and performance. Roger Scruton has pointed out the dichotomy of musical movement (1997, p. 51): nothing actually moves except the imperceptibly vibrating air and the perceptibly moving performers and their instruments. At certain volumes, loudspeaker cones betray acoustic vibration converted to analogue signal, and further detectors of vibration can be employed to show vibration, such as the oscilloscope. Musical movement, however, does not take place in a form analogous to Tinguely's toy machine sculptures, Calder's mobiles, the musculo-skeletal patterns of a racehorse caught on film or the internal combustion engine and the vehicle it drives.

Musical movement conventionally and frequently traditionally takes the form of pitch variation often in patterns based upon a diatonic scale or mode harmonic movement between relative (or dissonant) chords and in periodic or aperiodic patterns of rhythm moments of movement which in their performance are seized inextricably from temporal physicality, but don't necessarily portray the musical movement characteristics beheld in pitch and harmonic sequences. The emergent link between this investigation and the musical style of minimalism starts with pieces of music which apparently eschew each of the traditional musical characteristics of movement. One such piece, relying on the strength of a single harmonic relationship of pitches and the literal unfolding of notes in physical time, is La Monte Young's

Composition #6: a 5th to be held for a long time. Examples of minimalist reductionism are foregrounded in works by Morton Feldman's proto-minimalism:

His later scores are not only sufficiently long to subvert their listener's sense of the passage of time while retaining developmental features, but also have a tendency to lock sounds into clearly audible, repeating metrical patterns: sometimes diatonic, often subtly changing, and thus creating ambiguities of musical time analogous to those found in Reich and Glass. (Potter. 2000, p. 6)

An evaluative conclusion of Potter's observation combined with empirical findings based on practical research (especially process 2, 'a semitone') is that the perception of overtones increases as a result of increased exposure by the observer to a single pitch over time. The ability of the observer to tune in to overtones is directly related to the dual experience of music and time. Three avenues for further investigation have suggested themselves in connection with this hypothesis, each displaying characteristics pointing to varying degrees of suitability for objective research. These are discussed below in suggestions for 'Further research and practice'.

5.3 Technical perspectives

5.3.1 Music theory

The study of issues relating to time in music supplies us with terminology with which to further evaluate musical activity. With these terms - linear, teleological, cyclic, and vertical - the auditive participant is armed with multiple listening strategies, in addition to those supplied by conventional terminology. These strategies can be used in turn to inform the process, as part of a feedback loop. An example of such a loop is the series of events leading to the method of pulse phasing devised by Steve Reich, as described in chapter 3.

Close inspection of sound vibration is a reminder of the nested constructs of *umwelts*. Single and multiple frequencies of monophonic and polyphonic textures

respectively are analogous to monotemporal and polytemporal phenomena. (The idea could be fancifully stretched to embrace concepts of parallel universes). Therefore, the single frequencies of sine waveforms, and the multiple frequencies of electro-acoustic waveforms, are analogous to temporal experience.

Reflective Interlude 1

Empirical evidence supporting the effect of combined nested vibrations was provided by chance in an educational workshop working on Benjamin Britten's 'Turn of the Screw'. Without reference to a score, the musical director demonstrated the E minor 9th chord used by Britten. The notes included in the chord are not unusual, but the 'spread' of the pitches lends particular character. The spread of complementary pitches (frequencies measurable in speed) resembles multiple temporalities in coexistence. This represents an example of nested temporal hierarchies. The emphasis on particular temporalities (pitch frequencies) results in cognitive perception of a particular ambience. Relationships between pitches (or small-scale parameters of temporality) are analogous to relationships between nested temporal hierarchies. This is a recurrent truth of music, and can be extended, using concepts of 'the Greater Present Moment' to other disciplines. The E minor 9th chord supplied the basis for empirical research composition 'Umwelt' (see score).

Notes on composition: representing non-movement in a time-based medium.

Music representing an absence of movement has been defined as non-teleological, circular, and vertical by Jonathan Kramer. These terms are useful to denote the ways in which music has been used to represent movement, and in the present discussion will be used to illustrate musical movement from a traditional (non-teleological), a cultural (circular), and an emergent (vertical) perspective.

The teleological, or goal-oriented, nature of music traditionally requires the use of such musical devices as pitch, harmony, dynamics, tempo, harmonic texture and formal structure to establish a home. Tension and interest are built and maintained by a move away from home and an eventual return to that home. In

keeping with similarly established traditions of dramatic narrative, movement towards the goal of an ending, a home, a closure, a finale provides movement, purpose and structure to the piece, whatever the scale, high art or low art.

Therefore, in the same way in which the audience of a movie in the Western genre can expect the good guy to triumph over the bad guy against a background of pioneering, horsemanship and gunplay, listeners to teleological music can expect a home and away journey through a landscape illustrated with melody, a harmonic rhetoric and the exploration of, for example, a specific vocal or instrumental timbre. Non-teleological music, in the sense defined here and as referred to by Kramer, foregoes these devices of movement as a means to reach an end, and the resultant sense of movement is altered, at least from a traditional sense. No end is required, no story narrated; no goal is to be reached.

Circular music can be found in music styles belonging to non-Western cultures and among indigenous Western ethnic cultures, most predominantly as providing dance music. While low-art dance music has probably existed for as long as music has existed, and has developed in parallel (and as an antidote to?) religious and ceremonial musics. After lining up for the pomp and finite crescendo of fanfare and ode, who would wish the celebratory party, embracing the circle of jubilants, to end, and what better way to avoid ending than to evoke a circle? The movement of circular music (for celebratory dance) is overt, professing the function of music to drive rhythm under the feet of the dancer, competent or otherwise. The movement of circular music (for dramatic or contemplative interlude) is similarly overt, professing the function of music to cocoon the audience, or, if in Bali, the performers, within the moment. The same harmonic and melodic rhetoric found in teleological music serves the goal in circular music of turning the circle for the participant. The narrative is momentary, however, and serves to provide illustration of the dancers now, or the contemplators reverie.

Kramer has described Balinese music and non-teleological music as Vertical. The term clearly focuses on non-teleological aspects of music for Kramer, but does it infer a cessation of perceived movement, or more precisely a redirecting of music movement away from the flow of physical time? If music such as that of the early minimalist composers, Young, Riley, Reich and Glass includes devices which have previously been used for their qualities of rhetorical motion, is there any real

difference in the motion present in minimalist music to that of the Victorian Romantic composers? There are two ways to answer this. First is to accept that all sequential pitches represent movement, and that the only devices avoiding movement are those of drone and extended formal duration. The second is to adapt vertical to define sequential pitch movement as tangential to the flow of time, allowing that there is movement, but movement perpendicular to the teleological arrow of thermonuclear time, and therefore non-moving in real time. The term vertical is especially useful to describe musical forms which have emerged as the result of technological innovation, specifically soundscapes and digital processing such as granular synthesis. (The term also sets a precedent for further analytic terminology, such as tempomorphic.)

Viewing these three terms (teleological, circular and vertical) from a chronological perspective, we can equate 'teleological' with Western classical music, 'circular' with that period characterised by the works of Debussy, Stravinsky and Schoenberg, and 'vertical' with pieces generated to exploring new concepts of musical time, as Kramer suggests. The term 'tempomorphic' may prove useful in connection with the distinct characteristics of music generated using modern digital and recording technology.

Reflective Interlude 2

Patterns of 'evolving trios' have appeared throughout the course of the investigation: a recurrent tripartite of ontological progress is represented by Duchamp, Cage and Eno (see appendix 12). Perhaps the development of approach is grouped in threes because a beginning, middle and end are supplied. The three-part series of hierarchy, plasticity and form which has provided a watershed for the study derives formal strength from a set of rules, an criteria of adaptable application, and the outcome of the two combined. It is not altogether fanciful that this pattern is sought among research findings in order to establish further validation or precedent.

Early in the research process, a reference (now mislaid) was found in which the three primary tools of music - melody, rhythm and harmony - were respectively revolutionised by Debussy, Stravinsky and Schoenberg. Perhaps this sowed the seed for the evolving trios.

5.3.2 Technology

Technological innovation has been a fundamental contributing factor in the emergence of that style of vertical music which has come to characterise ambient soundscapes (see chapter 4). With each phase of technical development, there have been attributable developments in musical aesthetic ontology (see the section on minimalism in chapter 3).

The main body of the investigation has concerned itself with events following John Cage's statement positing the advent of magnetic tape music as a reminder that we are in time itself, not in measures denoted by numbers (Silence. 1978. p. 70).

Had the survey focussed on an event almost half a century earlier, such as the introduction of the Theremin as a starting point, there would have been a greater focus on the establishment of European styles characterised by Musique Concrète, Darmstadt and IRCAM. As it is, the influence of developing technology on North American-based minimalism has been debated at length in order to address aesthetic developments in approaches to musical temporality. The inclusion of technology as a fundamental in the development of empirical research has been less discussed in the investigation, but has nevertheless provided a major aspect of the practical heuristic research, (as evidenced in the evaluations of appendix 13).

The evolution of style in the practice of Robert Fripp has reflected the impact of new technology as the use of tape in the performance of 'Frippertronics' (Let The Power Fall. 1981) has been superseded by the use of digital technology to produce 'Soundscapes' (The Gates of Paradise. 1997).

The availability of technology has meant that practical research undertaken for this investigation could progress from being purely music-based to include still and moving images. Developing technology impacts on process methodology and availability, and increases examples of nested temporalities (see empirical findings, appendix 13).

5.4 Performance

5.4.1 Improvisation

An evaluation of the solo performance presented at the conference on Liminality, 2000 (included in appendix 13), provided insights to the nature of characteristics relevant to tempomorphic performance; notably, the removal of ritual attendant with conventional ensemble performance. Traditionally, there is a ritualised start to performance denoted by a) joining other performers prior to performance, creating a gestalt of preparation (often rehearsed), and/or b) entering a dedicated performance space - typically a stage - to mark the change into a state of performance. The solo nature of the performance, despite the support of the projector technician, removed one ritual, and the other was removed by the layout of the venue. This was further removed by the conscious placing of the performer in a position of (reactive) audience to the projected images. There are parallels with the role of the improvising organist providing accompaniment to silent movies, but in this instance, with a deliberate absence of narrative.

The establishing of a precedent for 'tempomorphic' in 'biomorphic sculpture', a term coined in 1936 by Alfred Barr, (Schneckenburger. 2000, p. 477) was subsequent to developing the term 'tempomorphic', towards the end of the research period, but nevertheless affords validation for the term. Further reflection on 'tempomorphism' questions the etymology of the term, which combines Latin and Greek: would 'chronomorphic' performance have been more accurate? The common usage of the term 'tempo' as a musical one, however, grounds tempomorphism in the discipline of music, and the topic in musical sensibility. See discussion and conclusions of chapter 4, regarding the relationship between improvisation, composition and performance, and their balance in tempomorphic performance.

5.4.2 Structure

While improvised soundscapes display characteristics of emergent structures unique to themselves, the attainment of mobile form has been an additional area of interest. Mobile form has precedence in the work of Stockhausen and Adams, and, when characterised by the sculptures of Calder, represents a musical 'problem' of

particular relevance to investigations of music and the ordered flow of time music might evoke/represent. 'Mobile' is understood to mean through-composed cells, the order of which can be determined during or prior to the performance event.

Three additional kinds of Mobile have been identified.

Firstly, in the course of empirical research, a methodological approach has developed in which 'Mobile' has come to be characterised by an open-minded, or indeterminate, attitude to sequential structure, eschewing reliance on structural narrative and instead focussing on complementary or contrasting textural and timbral characteristics. Brindle's description of Earle Brown's work illustrates the provenance of this kind of mobile form:

Inspired by Alexander Calder's 'mobiles', Brown designed graphic scores which could be used in various ways, to give different sound interpretations of structures which were almost completely indeterminate in musical terms. [...] Brown's objective is to provide a 'programme' which can be given identity of a different kind at each performance. In other words, we have here that mobile, open form which European composers were to reach out for in the early Sixties, and of which Brown was the real originator. (1987, p. 130)

The second kind of mobile form is characterised by the cyclic form of a 12-bar blues. This appears to represent an adaptable and hardy 'mobile' form, explaining the longevity of the various blues styles and those it has inspired. A third mobile form is apparent in the reinterpretation of material (originally developed by Eno and Bowie) by Glass, and which is perhaps better described as arrangement (Glass, Philip. Low Symphony. The Brooklyn Philharmonic Orchestra, Dennis Russell Davies. New York: Point Music, 1993). In empirical research, the most successful mobile form achieved was by elongating recorded material through a process of granular synthesis. This mobility was achieved not by altering the sequence of events, but by distorting their duration, and in one sense is not, therefore, mobile.

There is an implied avoidance of teleological narrative in mobile form. The use of tones and harmonic structures which were not reliant on sequence was a useful tool in constructing soundscapes. Therefore, two chords (for example I-IV) offering movement with minimal character difference (in addition to common tones)

function successfully. The result is music possessing predominantly textural characteristics. The necessity of order to achieve methodology resulted in the sequencing of mobile forms to construct HPF. The attraction of mobile form remains, like stasis, problematic, but one in which the goal of remaining the same work but from different angles - like a hanging mobile - provides a jumping-off point for future composition. Mobile form, like stasis, is problematic because of the mimetic relationship of music and time.

The inclusion of practical research in the field of video has highlighted issues of narrative in the relationship between music composed for moving image and the image sequence. While this area of study has only touched the surface of the subject, some comparative observations have been assembled with a particular focus on narrative. The videoed record of the educational workshop 'A Day in the Life', has narrative function, supplied both by the progress of the day and by the songs lyrics and music. In contrast, Process X of the empirical research, 'Dog Solitude', characterised by music performed and recorded to for moving images to be generated for, has non-conventional narrative function, such narrative as there is being contained in the changing temporality - tempomorphism - of the music, for which imagery is to be supplied. The extant example of Sergio Leone's film Once Upon a Time in the West, (Paramount, 1968) with music composed by Ennio Morricone, displays a narrative function shared between music and visual imagery. Traditional subtext of musical style and content deliver narration, while imagery simply complements it.

5.5 Composition

5.5.1 Extant examples

The concern of the investigation has been primarily with processes which have been illustrated with original and extant musical examples, rather than choosing a particular work and studying it in depth. However, a series of works have been referred to recurrently, and are briefly returned below, for the reasons outlined.

Because the survey has particularly focussed on issues associated with verticality in music, certain basic musical phenomena have been affirmed, which has led to choosing examples from the minimalist oeuvre: Music is vibrations in the air,

therefore any vibration represents movement. (No vibration is equal to no time, and no music, except in a conceptual sense). Therefore, vibration has an inherent temporal factor. The composition of vertical time music (allowing that 'vertical' has an ambiguity in the sense that there may be a suggestion that the velocity of temporal motion is diverted as opposed to slowed) is underpinned and informed by terminology and sensibilities borrowed from: existentialism, minimalism, multidisciplinary sources, and the multicultural study of time. The reduction sensibility of nested temporalities suggested by the theory of *umwelts* recalls the reductionist sensibilities of minimalism. The emergent hypothesis of this investigation is that the impact of minimalism on music, as discussed in chapter 3, was the development of music's temporal language through emphasising duration as a) experience and b) structural device.

Examples of mobile form in composition which have provided material for debate are as follows. In the example of mobile form provided by Stockhausen's Klavierstück XI, the process is not audibly transparent to the listener, but to the composer and informed performer. The taped electro-acoustic music for the multidisciplinary Philips Pavilion of Varèse's Poème électronique facilitates location-specific ambience and audience movement. The 'Low symphony' by Philip Glass, based on David Bowie's record album Low, represents one of two sides of the same coin for this research, providing a display of stylistic mobility and a feedback loop between 'classical' and 'rock' genres. In Steve Reich's 'It's Gonna Rain', an ostensibly *musique concrète* composition serves to indicate a precedent for sampling and that technique's 'resultant mobility', the re-evaluated potential of repetition, and the development of a compositional process. The use by Terry Riley of Miles Davis' 'So What', carrying with it sensibilities of 12-bar structures and modal improvisation, serves as an indicator of adapted performance at the interface with technology. Eno and Fripp's (No Pussyfooting) also indicates adapted performance, sketching a blueprint for soundscape technique and the primacy of process over content. My Life in the Bush of Ghosts, the result of collaboration between David Byrne and Brian Eno, displays the application of mobile samples in conjunction with cyclic structures resulting from adapted performance.

5.5.2 Empirical findings

The empirical findings of practical research are logged in the notes for processes and artefacts (see appendix 13). Practical research initially took the dual form of solo music (for performance and recording), and of music generated for ensemble performance. The artefacts resulting from the solo and ensemble areas respectively each have contrasting characteristics of media and residual evidence for evaluation.

A research advantage of the solo work was the ability to work flexibly and rapidly, developing content and media as empirical judgement suggested. This advantage was offset by the brevity or absence of logged aims, method and outcome. A research advantage of the ensemble work was the opportunity to gauge a range of individual personal reactions in a performance situation dictating the application of research ideas through a conventionally notated score. The advantage of residual research material in the form of scores and notes on direction (stating aims and research context) was offset by the amount of time and people resources consumed.

The order of findings presented here are: findings of ensemble work; findings of solo work; findings of the empirical research procedure; and overall observations.

Reflections on an extract from the series of notated ensemble compositions for the Brunel New Music Ensemble, Three Textures: stasis, motion/stasis (Doyle, 2002), trace the influences of the research area on the composition. This piece was composed using the device of nested cells, and sets out to explore relationships between cells of movement and cells of stasis. Themes of teleological form, development of methodological process, and minimalist sensibilities have each had an impact on the progress of this piece. In order to realise and emphasise the interdisciplinary nature of the work, it will be printed as a score, coloured in section of temporal texture as appropriate, and displayed by placing on a wall, or bound. This action deliberately references the Philip Glass violin solo 'Strung Out' (Glass, 1988, p. 20); the placement of Earle Brown's graphic scores at the interface with visual art ('there is a distinct resemblance between some of his scores and certain pictures of Piet Mondrian' Brindle, 1987, p. 89); the three primary colours of Mondrian's neo-plasticism (Frampton, 1994, p.142); and the establishment of a

particular version as the original, as in the case of Duchamp's 'Fountain' (Gablik. 1994, p. 248).

The solo area of research covered more ground than the ensemble area, for obvious reasons of flexibility and (using recording and processing facilities at home), ready resources. A series of soundscapes were commenced, each focussing on a parameter, or group of parameters, for empirical evaluation, providing the content for what proved to be a practical research procedure characterised by ten stages of progress. The course of development these pieces took is logged in appendix 13.

A recurrent theme in the soundscapes is in some way to identify individual pieces with an umwelt. Elsewhere, the basis of a soundscape experiment was to play two pitches defining a minor third. A performance methodology emerged having developed and defined relevant issues for chapter 4. This part of the investigation attempted to define the manner and criteria informing the solo performance presented at the 2000 Liminality conference in Twickenham.

Subsequently, the performances were conceived as attempts at addressing tempomorphic issues. Therefore, a set of recordings was developed to try to make 110 bpm seem 'fast' or 'slow'. A process of solo performance for recording was developed, becoming characterised by live performance to DAT tape. The resulting DAT recordings feature sonic textures made primarily by processing signals from an electric guitar through a pre amp and delay device which can be altered to a looping device. The use of either delay or loops in this process became a consistent and adaptable characteristic (see appendix 13).

Reflections on the impact of practical research on the written thesis have led to a formulation of terminology to define various areas of the research process. Of particular interest is the realisation of the nature of the 'immediate artefact', and the implications of the term for performed and recorded music.

5.6 Reflections on the survey

5.6.1 Achievements

Achievements of the investigation fall into categories of those based on (i) devising a suitable methodology for practical research, and (ii) those of a theoretical nature based on research commencing with literature review findings, completed by

(iii) an overview of the interdependent relationship between theory and practice afforded by characteristics of the inquiry. The formulation of a series of new or redefined statements of hypotheses is viewed as a positive result of the survey. That such statements can be challenged with further debate is seen as an indicator that the research area has ongoing potential.

(i) Achievements based on practical findings in a series of sentences for each are summed up as follows: The establishment of a structured methodology (HPF) with which to develop both performance and analytic structures. The development of a music-based practice based on a multidisciplinary format involving still and moving images. The combination of research material and generative practice reflects multidisciplinary temporal concepts in the practice of music. The compilation of evaluative observations prompted by practical research, and providing data to feed back into the loop, such as the definition of one musical process as one of motion stasis, or maintaining a constant tempo. Identifying how areas of suggested practice can cause concern for other performers, such as the challenge of the task of performing repetitive cells to a member of the NME who objected to the 'menial' characteristic of the part for the first violins, and compromised ensemble conventions. The use of videotape to compare and develop a teleological structure from a non-teleological structure, in the case of HPF, and to question audio-visual narrative function, a response to which has been *Dog Solitude*.

(ii) Achievements of a theoretic nature include defining stylistic areas of music-making which afford insight into nested temporalities in perceived experience of music, in particular, mobile form. One way in which mobile form is seen as pivotal to the course of the investigation is the link the idea forms between music and other arts, as demonstrated by the work of Earle Brown. The idea of mobile form, in the light of music's mimetic relationship to time, is, like the idea of stasis, a seemingly unsolvable compositional conundrum prompting creative innovation. Another theoretic achievement is seen as the establishment of a precedent for multiple temporalities, with a concurrent set of criteria for each, depending on contexts of culture and discipline. The gathering of multidisciplinary sensibilities and terminology has informed debate and analysis.

(iii) Achievements of the research process as a whole include the compilation of a reference database to facilitate this survey and future investigations. As has

been mentioned above, the formulation of questions with an increased level of definition, pointing to implications for future research (see below) is also perceived as a positive outcome. One such question raises issues of possible comparison between 'stillness' and the 'silence' proposed by John Cage. Would a close examination reveal evidence that there is in fact no stillness, as there is no silence? In any event, an evocation of (impossible) stillness is seen as a valid musical problem of composition, though difficult to validate as a problem of perception. The identification of events and objects using temporal criteria (an event can only be defined by its temporal point of commencement and subsequent duration of process) is not new, but has proved a useful tool to re-establish in the course of the investigation. A success unique to the project has been obtaining the participation of an established practitioner in the field of soundscapes: being able to include the views of Robert Fripp has supplied the investigation with a primary source expressing experienced and independent views on the nature of time and musical practice.

5.6.2 Problems

Musical practice

Two particular problems seem inherent with regard to the relationship between music and time. Firstly, there is the impossibility of releasing music from the movement of physical time. Therefore, a vertical, static piece always has a beginning, middle and end. The mimetic character of music in relation to time is the inherent 'flaw' of music as an artform, because music in performance and audition has the dual function of operating aesthetically and as an immanent timekeeper. In this way the art of music characterises the statement 'art mediates between the fear of being dominated by nature and the danger of repressing it' (Williams. 1989, p. 193).

The second inherent problem regarding music and time is probably the reason for Robert Fripp's response, that academic exploration of time and music is irrelevant: 'a theoretical presentation is of little value' (see appendix 8). The theoretical presentation is of little value compared, perhaps, to the presentations that can be made within the practice of music.

Research

The breadth of the subject area has proved somewhat problematic because of the inclusion of temporal concepts, has resulted in necessarily skimming the surface of topics which would otherwise bear closer examination, such as the output of a single practitioner. Areas for investigation which would be potentially fruitful but have been neglected or ignored for the sake of expedience include practitioners such as Gyorgy Ligeti or Harrison Birtwistle, for example. A close investigation of a non-Western indigenous style belonging to a particular ethnic culture of a given historical period may have provided interesting comparative material. Contemporary developments in Rap-based music might similarly offer material for research with a greater emphasis on socio-economic and political factors in the incidence of music production highlighted by teaching. The neglect of devotional music, provided to offer a spiritual respite from the hardships of everyday life, might prove a useful starting point for further study.

A further research problem has been the analysis of non-English texts, specifically Michel Baudson's Zeit: Die vierte Dimension in der Kunst. D-6940 Weinheim: Acta Humaniora, 1985, from which multiple images were selected and included in practical research, although their use remained uninformed by their source context.

In terms of the research conducted, perhaps a greater opportunity for comparative case studies could have been forged using the New Music Ensemble at Brunel. The possibility of including some factor of data-collection and consequent analysis was considered from the outset of the project, but never developed into a coherent proposal, always giving the appearance of a time-consuming task occupying a position of secondary priority.

A section of empirical evaluation was to be based on the image selections for HPF. It has proved problematic to use the bibliographical material and the individual images, complemented with a commentary describing the research relevance of each piece. At first, the logic of appending bibliographical data with notes on criteria for inclusion appeared promising in its simplicity and relevance, as well as successfully establishing a link between artforms of multidisciplinary media and the academic investigation. However, this aspect of the project, despite affording positive results in other areas, has not proceeded to fulfil the rounded, informed and

annotated document originally envisaged. At the closing stages of this investigation, the attempt to annotate the images is a reminder of Wittgenstein: 'what we cannot speak about we must consign to silence' (Ayer. 1984, p. 112).

5.7 Implications

The observation by Steve Reich has been quoted above, but bears repeating: 'Music Dance Theatre Video and Film are arts in time. Artists in those fields who keep this in mind seem to go further than those mainly concerned with psychology or personality' (Reich. 2002, p. 81). Is the same true of research projects? Were the study to be conducted again, it might prove useful to overcome problems of limiting the subject matter by focussing on the *Poème électronique*. Many issues relating to the multidisciplinary provision of a temporal ambience are fundamental to this work, and the musical significance of the project is grounded by the fact that the composition by Varèse is the only enduring artefact (see appendix 6).

Further implications of the research undertaken include, in no particular order: the need for a constant review of analytic language and analytic strategies necessitated by new sounds in new media in new times brought about by technological innovation; a readiness for musicologists to reassess the devices, messages and media of today's and tomorrow's music in an age of mass satellite communication instigating a need for variety and global communication which eschews styles of tradition for styles of market-placement; and that change demands confidence, and can be seen as a progressive thought process, while lack of confidence (or fear) demands a return to tradition, and can be seen as a reactionary thought process.

On a technical level, the microscopic inspection of sonority afforded by digital processing requires a readiness on the part of the musician to add pantonal ambient sonorities and textures to the palette of devices, and, due to a combination of close-mic techniques, digital capture and processing, an increasingly detailed interrogation of anthropological sonority is becoming available.

5.7.1 Moving Images

The inclusion of multimedia research artefacts points to the potential for development of the CD-ROM as a medium to replace or append the conventional thesis format.

Developments in the methodology for practical research for this project, culminating in 'Hierarchy, plasticity and form', has parallels with aspects of the development of the Poème électronique. The 'how' and the 'why' of the process becomes a dialectic of procedure, providing a prime formative element. There are similarities between HPF and Poème Électronique: each has been designed to present a series of ideas without the use of text; each includes an independent but complementary musical element in its execution; and each arrives at a form derived from a combination of multidisciplinary concepts between the arts, the sciences, technology and presentation. There is also common ground in the development of the two projects: Rietveld is a character on the periphery of the development of the Philips Pavilion, and a contributor to the De Stijl neo-plasticist movement. According to the analysis provided by Marc Treib of factors contributing to the construction of the Philips Pavilion, Le Corbusier consulted cinematic techniques outlined by Eisenstein, resulting in the use of montage and close-up for the event (Treib. 1996, p, 147). The implications for future research projects combining, as the Philips Pavilion did, properties of colour, sound, light, and rhythm, with a common factor of time (Treib. 1996, p. 93), are that there is a precedent rich in ideas to use as a base.

5.7.2 Holistic Impact

Extramusical implications of the survey include the provision of an analytic framework for time-based arts in nested temporalities.

The awareness of cycle or loop resultant responsibility has implications which have been discussed above. Two such implications include the greater present moment, as described by Anthony Blake (1996, p. 260) and the Long Now Foundation < <http://www.longnow.org/>>.

The pursuit of objective identification of the artefact or event by using dating methods has been a method recurrently used within this project and has its attractions for application elsewhere, although a dependence on such a system without additional descriptive information may prove limited for general use.

5.7.3 Further research and practice

Recommended areas for further research and practice have been previously mentioned, and are reviewed here as ten possibilities for future study.

One: Is Stasis similar to Cage's Silence? Focus on a comparative evaluation between stasis and silence. For example, selecting specific ideas contained in 'Silence' for a methodology.

Two: Further implications of the term 'vertical' when applied to music. In one sense, there is an implication that such music, though it cannot halt the arrow of time, moves at a perpendicular tangent to the thermodynamic timeline. Is this a further example of tempomorphic theory?

Three: Appraise aspects of musical innovation tracing a chronology of temporal language: explore the hypothesis that teleological equates with classical, circular equates with modern, vertical equates with cultural assimilation, and tempomorphic equates with technological innovation in music. Investigate using these criteria as tools of analysis.

Four: An examination of the music of David Bowie, Brian Eno and Philip Glass represented by the 1993 Low Symphony. This might include a comparative evaluation of process, content and performance of the Glass piece and the 1977 Low album upon which it is based. Include an evaluation of factors of stylistic evolution, including crossover between classical and pop genres.

Five: Explore relationships between minimalism and Reich's works for tape; Glass, rock and visual theatre; and the impact of studio technique (including synthesizer and sound processing) and orchestral innovation.

Six: The concept of consciousness expansion is a logical area for study grounded in psychology, but with problems of evaluation and associated drug-related issues. A strength of such an avenue of study would be the ability to evaluate the emergence of a musical style from a social and cultural context in which experimentation with drugs and their effect on consciousness was a characteristic.

Seven: This avenue of investigation focuses on the hermeneutic relationship between the ability of the listener to tune in to overtones, and the presence of the overtones. An advantage of an investigation examining aspects of duration and

overtone perception would be the potential for accurate comparative measurement of both temporal duration and of harmonic overtones. An investigation based on observations of hermeneutic cycles has a basis in philosophy and can be seen to have advantages for application to multidisciplinary study: In Heidegger's terms, Dasein, human existence in its situation, stands in the event of unconcealment, and accordingly understands (Kisiel. 1985, p. 3).

Eight: The expanded present: this area for further study has been broached by the appraisal of the methodology developed by Robert Fripp (see chapter 3 and appendix 8). The avenue of inquiry using concepts of a greater present moment also has a basis in philosophy, but from an empirical perspective. The positive potential held by a course for debate based on the expanded moment is also apparent in Brian Eno's article, 'The Big Here and the Long Now' (The Long Now: <http://www.longnow.org/>).

Nine: The impact of a search among artists of the twentieth century for universal criteria with which to inform their methodology has been a recurrent theme in the research. Evaluate the impact of orthogonal universal laws in contrast to the later adoption of Eastern philosophies by Western practitioners.

Ten: In music pedagogy, the necessity for guidance in the counting of metre is emphasised by the high incidence of teenage students with little music training believing a preparatory count-in of '1, 2, 3, 4.' to be another way of saying '1, 2, 3, go!' This observation translates as a preoccupation with 'becoming' rather than 'being'. Is it valid for these ideas to be introduced to music students at a fundamental level?

5.8 Final analysis

For a final analysis, the findings of this investigation are grouped into four categories. These categories reflect holistic factors contributing to and emanating from issues raised; the nested temporalities represented by the primary hypothesis; the strategy of evaluating music, where appropriate, in terms of its vertical quality, and; the primary hypothesis, tempomorphism in musical theory and practice.

Holistic issues relate the primary subject of investigation to the external world, and provide a comparative context for evaluation. The prevalence of methodology

based on orthogonal criteria by such figures as Mondrian, Le Corbusier, and Varèse, in addition to the emergence of minimalism, indicates a recurrent pattern of the 1900s. (The pattern, it should be admitted, may indicate evidence of a hermeneutic circle, and a research method of compromised neutrality.) The pattern of orthogonal recurrence suggests a commitment by artists of all disciplines to establish objective method. The impact of minimalism on music was the development of music's temporal language through emphasising duration as a) experience and b) structural device. There are signs of an emergent temporal language in music, attributable to the minimalist style, in which musical time is re-evaluated to focus attention on duration as experience and structural device. The study of music informs the production of music, as evidenced by the listening strategies used by Reich when he developed phase shifting listening to Brother Walter in Union Square (Potter. 2000, p.167). Questions regarding the efficacy of a musical style are subject to review in keeping with developments of social context. The musical styles discussed in the course of the investigation continue to develop and inform musical aesthetics and practice. Multidisciplinary sensibilities and terminology inform analysis and debate. Recording and photography have served to turn time into an artefact, a view clarified by addressing music from a wider context of innovative artforms. The impact of pattern recognition, underpinned by the theories of Ramachandran, and contributing to the development of a methodology characterised by hierarchy, plasticity and form, is an additional and unforeseen hypothesis which has emerged during the course of research. The desired temporal ambiguity found in music denotes a rejection of conformity and a search for new ideas.

Nested temporalities have been described as *umwelts*, and reflect an ongoing concern with - and study of - time for both the individual and for society. This area of study has been particularly addressed in the writings of Julius Thomas Fraser, Jonathan Kramer, Barbara Barry and David Epstein. According to these sources, especially Fraser, we operate using nested temporalities (Fraser. 1982, pp. 163-164). These temporalities are characterised by differences in duration, associated with a sense of speed. The insight into nested temporalities afforded by the experience of music is provided by the practice of choosing a particular tempo, or motion, and maintaining it for a similarly chosen duration, resulting in a period of stasis. Developing technology impacts on process methodology and availability, in

the form of digital processing and sampling, and, having succeeded in equating original music to each of the umwelts described by Fraser in practical research, increases examples of nested temporalities.

Vertical music is a term used by Jonathan Kramer to describe a musical style 'epitomised by' Morton Feldman, and informed by theories of nested temporalities which help us to understand 'not only vertical time but also many of the other temporalities of music as metaphors for time in the external and internal worlds' (Kramer. 1988, p. 394). The interpretation of vertical music has arisen from multidisciplinary sensibilities foregrounded by the minimalist style of the late twentieth century: Kramer has cited the work of Morton Feldman as a prime example of vertical music (Kramer. 1988, p. 386). The term 'vertical' signifies the spatial character of music. The term 'vertical' used to describe music also signifies an attempt to introduce new analytic language for application to emergent musical styles by thinking 'laterally'. Concepts of teleological, cyclic and vertical music (and time) have been established. In answer to the question posed at the beginning of this chapter, vertical music finds validity of function because a) it represents an emergent musical style (evolving from multicultural influences and a cross-fertilisation between 'classical' and 'rock', and powered with energy from both genres), and b) because temporal perception is informed by aesthetic sensibilities. In addition to support from the theory of nested temporalities, other theories support altered temporal perception in aesthetic evaluation, such as the concept of time reference explained by Leonard Doob: 'The agreement to renounce reality when reacting to art leads to experiences which enable the spectator to pass temporal judgement within the framework of the medium' (1971, p. 383). The impact of technology has been a prime factor in the development of ambient music, as described in chapter 4. The ambient style has characteristics of technological impact separating it from some vertical characteristics, and can be more accurately analysed as 'tempomorphic'.

Reflections resulting from observation of practice and empirical judgements based on practical tempomorphic research have foregrounded the following issues. The procedure of choosing, or using a listening strategy to experience a particular tempo or absence of tempo can be defined as tempomorphic. The period of stasis resulting from such a choice can be described as motion-stasis. This conclusion is

the result of efforts to define compositional expectations from the content of a notated score generated for the research project. A series of characteristics have been assembled to define tempomorphic performance. These characteristics have been applied to the generation of music to provide artefacts for empirical evaluation. Of the twenty characteristics of tempomorphic performance outlined in chapter 4, the use of additional projected imagery became a prime concern of practical research. This audio-visual concern has been found to be common to the development of established practitioners, as in the case of Steve Reich and his recent collaborative work for music and video, Three Tales. (New York. Nonesuch, 2003). Empirical research has confirmed problems for emerging video arts regarding the absence of 'something held in the hand' (Bailey. 1992, p. 62) (a problem musicians continue to experience); pointed to the usefulness of the 'immediate artefact'; and succeeded in forming a methodology linking research issues to practice. The music of 'immediate artefacts', using delays and loops, has displayed primary characteristics of texture.

This investigation, in setting out to address nested temporalities in the experience of music, has become an inquiry into process and procedure: minimalist, multidisciplinary, audio-visual, developmental, emergent, evaluative, empirical and temporal. If, in conclusion, the survey has a failing, (and it is bound to have many), it is a failing to provide a conclusive evaluative method for describing the many varieties of musical time. Where the survey succeeds is in the raising of questions regarding the ways in which we operate in and around musical time.

Returning to the title of this thesis in order to close the loop of investigation, the nested temporalities in perceived experience of music represented by tempomorphism display two characteristics of application. Firstly, tempomorphism is an auditive tool of analysis which facilitates the practitioner with a listening strategy suited to harmonically static, or vertical, music. Secondly, used as a tool of process, tempomorphics facilitates the practitioner with a methodology based primarily on duration, the outcome of which displays textural characteristics combined with nonteleological formal structure. The development of the methodology associated with, and resulting in, tempomorphic analysis and process is a response to exposure to soundscapes and generative music, in addition to music made with tape- and digital-delay devices. The initial search for a term to describe and explain such music resulted in the adoption of 'vertical' (Kramer. 1988) to apply to music

exhibiting characteristics more reliant on sonic texture than melody, conventional harmonic movement, or virtuoso improvisation. The predominant characteristic of process, in the closing stages of the investigation, is regarded as one of duration: to interpret music from a tempomorphic perspective is to consider it as a series of nested durations.

At the time of writing, advertisements in London Underground stations invite the public to use innovations in broadband internet access in order to sample an unprecedented variety of electronic media resources, signalling a further blurring of conventional cultural boundaries for those with adequate technology as we progress into the twenty-first century. The common global currency of technological innovation is time, both in terms of time taken to download multimedia data, and the leisure and working time enhanced by the downloaded content. As a new era of technology is entered, it seems reasonable to suggest that new approaches to musical style and technique, as characterised by tempomorphism, will become a significant factor in a developing aesthetic within and influenced by electronic media. It seems equally reasonable to assume that the guiding philosophy behind the chosen method of musical and extramusical communication, whether based on short-term economic concerns or a wider view of the long now, will affect the course of historical fact.

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Appendices

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Appendix 1:

Notes on Methods of Time measurement J.T. Fraser.

- 1: Earthly cycles;
- 2: Geared cycles;
- 3: Tabulated cycles;
- 4: Atomic cycles;
- 5: Reference epoch;
- 6: The ideal timekeeper.

THE SEARCH FOR ORDER:

- 1: It is necessary to recognise two continuous processes, each with identifiable, distinct states; that is, each capable of defining countable instants.
- 2: It is necessary to recognise two nonsimultaneous events, with each event comprising a local coincidence of two instants, one instant each for the two processes.
- 3: It is necessary to have a rule of transformation, or at least to assume that such a rule exists, whereby the number of instants between the two events may be changed into the number of instants counted along the other process.

The atomic, astronomical and biological clocks form three distinct families of time-keepers. Clocks belonging in the same family remain comparable in degrees of unpredictability or, in practical terms, in degrees of accuracy.

CLOCKS:

- 1) PHYSIOLOGICAL - ecology of life possible.
- 2) ASTRONOMICAL - more precisely predictable.
- 3) ATOMIC - phenomenal accuracy.

p.175 (Biogenesis and organic evolution)

Because of the hierarchical organization of nature, the time, space, and connectedness of level-specific laws must necessarily change from one level of complexity to different levels of complexity.

What is actually observed is the existence upon each organizational level of a region unrecognized and hence undetermined by the laws of that level. Out of the regions arise, in the course of evolution, unpredictably new structures and processes governed by new, stable principles. The universal ordering principle, time, itself partakes in these rites of passage.

Temporal levels:[An animal's functional] cycle is an information carrying loop. Along the loop external signals pass and become internal signals. They are processed and evaluated in terms of the capacities of the organism and the modalities of its functions. Then they are passed on as commands that control, more or less, the animal's behaviour.' 1982, p. 20

Appendix 2: Demarcation, Definition, Hierarchy: Accent on Metric and Rhythmic Levels.

(Epstein, David. 'Thoughts for an ongoing dialogue' Shaping Time. New York: Schirmer 1995, pp. 29-35)

Level 1: Beat and Pulse - The most significant aspects of BEAT, the primary level of meter, concern not only its durationally equal spacing, but the manner of accent [...] PULSE, the primary durational level of rhythm, is the complimentary unit to beat with regard to meter. While metric beat carries the neutral marked code of accent just discussed, pulse enjoys a far broader spectrum of accentual articulations, the variety potentially as great as the character of musical works themselves.

Level 2: Measure and Motive - The second level of meter, comprising the MEASURE (or bar), imposes pattern upon beats-duple or triple patterns, in Classic-Romantic music, as well as compound duple or triple patterns (8, 8, and so on). The initial beats of measures tend to receive the strongest accentual weight, a product, it seems of the counting process itself, for this means the starting unit of the metric group is distinguished. That accent is not a matter of psychological schema alone; we feel it physically as well, through muscular tension. MOTIVE, the second level of rhythmic hierarchy, is complementary to the metric domain of measure. Motive constitutes the minimal groupings of pitches whose contours and rhythmic shape mark them as perceptually memorable. Of its two components, rhythm, more than pitch (and pitch contour), seems the more powerful in terms of perceptual impact.

Level 3: Hypermeasure and Phrase - HYPERMEASURE, the next level up in the metric hierarchy, is analogous to the structure of measure, which serves as its prototype, though it is of different scale and surface features. The analogy is most easily seen in considering hypermeasures of minimal length-2 or 4 bars [...] Most writers agree that hypermeasure scaling seems viable to the next larger span beyond 4 measures-to 8 bars, that is, and possibly to yet a higher step, an enlargement (again by a factor of 2) to 16 bars. Consistent with the nesting principles of hierarchy, the accentual properties of lower levels should hold for each of these proportionally larger durations [...] Meter as hypermeasure, by contrast, is less a fact and more a matter of individual perception-our unique method of construing the organisation of measures. PHRASE, the next higher level of rhythmic organization, parallel to metric hypermeasure, is also marked for perception by its grouping property. Melodic contours, > Cadences.

METRIC	RHYTHMIC
1-BEAT	PULSE
2-MEASURE	MOTIVE
3-HYPERMEASURE	PHRASE
4-MELODIC CONTOURS	
5-CADENCES	

Appendix 3: Parameters of 'Time-Molding'

Source: Barry, Barbara. Appendix I Parameters of 'Time-Molding' 'The Theory of Musical Time' Musical Time. New York: Pendragon Press, 1990. Pp. 231-2

Parametric [From parameter - aspect, or dimension of music]('small-scale')

- a) articulation/mode of attack - legato, staccato, spiccato, pizzicato
- b) dynamics
- c) vertical density-spread of notes per chord
- d) distribution spread (through range-also take note of doublings, unison and octave)
- e) tessitura (often works with d)
- f) event-rate - rate of change of events [event- *identifiable* small-scale unit, as motif, but extended to any combination of melodic/rhythmic/harmonic dimensions.]
- g) small-scale repetition-note, motif, phrase (see also formal repetition)
- h) rhythmic articulation of phrase-length, internal articulation by its rhythmic figures, combinations of symmetry/asymmetry
- i) surprise against expected element of stylistic norm (see also formal)
- j) *memory* (see also repetition and memory in large-scale)
- k) octave register - often important in Webern, and in some tonal music
- l) continuity-melodic
- m) system/framework (see also formal)
- n) harmonic rate (see also d)
- o) chromatic density-melodic/harmonic (see also a)

Formal and large-scale

- a) tempo
- b) large-scale repetition-section (either direct, as in exposition repeat or later, modified, as in recapitulation)
- c) density norm of section/movement/work
 - i) harmonic density
 - ii) textural density (range, amount of lines, equal voicing of many lines [polyphony]) as against melody/accompaniment
 - iii) chromatic density as stylistic norm
- d) expectation/surprise against stylistic norm
- e) memory
- f) system/framework
- g) process rate

Appendix 4:

TIME MODELLING

Overview

Research Problem: Humanities Focus

Conceptual and Representational Issues

Informatics and Temporality

Visualizations:

- Archive
 - Linear
 - Calendrical
 - Bivariate and Multivariate Tables
 - Bar Graphs / Sliders
 - Dials
 - Maps (2, 3, 4-dimensional)
 - Drawings (flow charts, tree structures, other topographies)
 - Temporal Relation Diagrams
 - Hyperspace images (n-dimensional)
- Projects: Ontologies and Relations
 - Time Lines (graphs, sliders, dials)
 - Time Planes
 - charts (calendars, tables, graphs)
 - topography (flow charts, trees)
 - Time Spaces 3, and n-dimensional
 - Reference Frames
 - Extrinsic – temporal references
 - Intrinsic – discursive structures
 - Notation Systems – causality, etc.

Theme: Cultural and Cross-Cultural Concepts

Theme: Geo-Spatial Temporality

Theme: Narrative Theory

Postscript: Relativity

Project Summary of concepts and vocabulary

Bibliography / Materials

TIME MODELLING

Temporal Modelling Project Overview:

In gathering material for this project, we looked at many fields of research that touch upon the topic of time, its conception and representation in graphic form, and its relation to issues of information in both scholarly and technical terms. As humanists, our research questions are motivated by a desire for an intuitive, but rigorous, way to formalize certain fundamental principles in the conception and representation of modes of temporality. How does one represent memory? Or anticipation? Or indicate the distinction between time recalled and time of an action in a scholarly project where the difference between an event and its retrospective impact are significant factors?

The summary of research offered here is dense, rather telegraphic in places. Our research took us into many areas, each of which has its own deep literature. Culling fundamental principles from these disciplines so that we might develop as complete a conceptual toolkit as possible has been a challenge. Moving between conceptual vocabulary and visual examples has provided a striking opportunity to synthesize formal (and not so formal) principles from a wide array of differently conceived materials. In the process, the specific contexts from which these materials are drawn falls into the background. In lifting the specifics of vocabulary to mark “tense modalities” or appropriating a glossary of terms used to specify elements in a temporal data-base we may have played too fast and loose with some of the frameworks in which these principles are meant to operate. The benefit? The multi-faceted perspective that one only gets from multi-disciplinary work – and a much enriched vocabulary of concepts, as well as some insight into the ways time has been treated within disciplines whose intersections are of use to us in formulating our project.

What are those disciplines? The history of time as an object of philosophical inquiry was one starting point. Philosophical frameworks have been well-established since the 5th century AD, with the major modification to these approaches having come only in the early 20th century with Einstein and Bohr’s work on relativity. Narrative theory, with its overlapping fields of linguistics and logic, provided approaches to the representation of time within language, and means of formalizing the temporal relations implied in discourse structures. Work in informatics offered concepts specific to computational environments as time-based “machines” whose operations depend upon synchronization and/or coping with its impossibility. In addition, the management of temporal aspects of data management offered a vocabulary for marking distinctions among different temporal features of information within databases (as well as the temporal features of data itself). Because much of our humanistic work links time to space, we have looked (less deeply, I confess) into geospatial-temporal relations and systems for their representation. Cultural specificity and cross-cultural perspectives have been touched on, also in only a preliminary way. In all of these areas, we have found and collected visual forms – graphs, charts, maps, tables, timelines, and other formal or informal schemata in order to abstract from them generalizable principles for our primary goal: the development of a palette of templates and metaphors for conceptualizing and modelling time.

The research summary is organized thematically. Excerpts and brief summaries point to primary sources. Images have been extracted and captioned to emphasize the principles they embody. This document has been prepared to assist the participants of our Summer Institute on Time Modelling, June 18-22, 2001 sponsored by Intel Corporation, to be held at the University of Virginia under the auspices of the Center for Digital Initiatives.

Research Problem:

- What templates and metaphors may be used for the conceptualization and representation of time?

- How can research in the humanities make use of a vocabulary of visual forms through which to represent temporal relations?
- How can visualizations of temporal relations be enriched through research into conception of time and graphic forms for its representation in other disciplines such as philosophy, the natural sciences, geography, history, anthropology, narrative theory, and statistics?
- Can these visualizations be organized into a set of tools that serve researchers in the humanities for conceptualization and display of temporal relations in their data?

Humanities Focus: Subjective Experience of Temporality

- What are the specific requirements for representations of temporal elements that derive from humanistic inquiry?
- How can the subjective temporal relations in lived and experienced time, often encoded in discursive, rather than numerical form, be accommodated in a graphic system?
- How can such subjective relations make use of the explicit systems for representing quantifiable data that have developed in natural sciences, statistics, or other mathematically grounded data bases?

Seminar Overview, Goal, and Principles:

- Three levels of inquiry should be kept in mind as the seminar proceeds:
 - General issues and concepts about time and temporal relations;
 - Questions specific to scholarly research, particularly in the humanities;
 - Requirements characteristic to data structures that support these issues and inquiries.
- The goal is to articulate the representational strategies through which these three levels can be integrated and to give them schematic visual form.
- Principles guiding our project are:
 - Wherever possible, make use of vocabulary or concepts already well-established within the literature;
 - Create the simplest possible set of representational strategies (metaphors or templates);
 - Work from case studies to create the set of representational strategies and then test to see if there are cases that have requirements beyond these;
 - Create graphical forms that are intuitive, familiar, and as much as possible, well-established as conventions within commonplace usage.

Conceptual and Representational Issues:

This brief summary draws on sources in humanities, social sciences, and informatics to establish the basic framework for our discussion. The conceptual and representational issues are divided between basic concepts of time and of temporal relations and a brief vocabulary of definitions of time within disciplinary frameworks. Temporal relations are further divided into two approaches, one from formal logic and the second from linguistics (or discourse analysis). Concepts of time, temporal relations, and definitions of time provide three intellectual frameworks we will reference throughout our discussion

Time vs. Temporal Relations: Fundamental to all discussion in this project is a distinction between *time* and *temporal relations*. *Time* appears to be a container, neutral, unbounded, while *temporal relations* are specific to the relative sequence and duration of elements within a frame of reference.

- Time: The conception of time poses issues of ontology and metaphysics. Time may be understood a container for a reality that exists in time, as an aspect of reality, or an appearance/artifact of human perspective.

Two primary conceptions distinguish *absolute* from *relational* time:

Absolute time is conceived of as a structural container of events.

Relational (relativist) time is an abstraction to represent relations among events.

EXCERPT: Fabio Schreiber, "Is Time a Real Time" is a discussion of temporal considerations in informatics, particularly, issues of synchronization in distributed systems. Schreiber's is the most complete overview of the literature at the intersection of philosophy, history, and informatics, and touches on most major points relevant to the seminar. Schreiber's summaries: Temporal ontologies -- "the major issues in the nature and in the structure of time":

- linearity vs. circularity
- finiteness vs. infinity
- openness vs. closure
- discreteness vs. continuity
- absolute (past, present, future) vs. relative (before, concurrent with, after)
- objectivity vs. subjectivity
- definition of temporal modalities

Temporal relations – logical and linguistic

Time topology – order relations

total – linear or periodic

partial - branching

Time metrics – arbitrary time entity correlated with unique numbers (granularity)

Historically, time has been conceived as cyclic/repetitive, linear/irreversible, and 4-dimensional space-time, with various attributes of ordering, ideas of the present, notions of causality, as implicit features of these concepts. In our commonsense contemporary perception, time appears to be universal, linear, and non-reversible but such a perception is open to challenge from various spiritual and physics-based perspectives.

EXCERPT: Huw Price, "The View from Nowhen" *Time's Arrow*, distinguishes two philosophical conceptions of time: one that takes the flow of time as an objective feature of the physical world and the other that conceives of time flow as an artifact of human perception. His discussion focuses on the "Archimedes point" vs. "time's arrow" – an objective relation to time that demonstrates that all "now" references are to time as "here" is

to space, mere artifacts of subjectivity that create an illusion of asymmetric relations in the physical world, including laws of thermodynamics, radiation, and cosmology. He asserts there is no objective basis for this concept.

- Temporal Relations: The conception and representation of elements in temporal relation to each other can be described in logical terms or linked to linguistic representations.
- Logicians conceive of temporal relations in first order theory (they are referred to as “tensors”). James Allen’s work is the much-cited example of this approach.

EXCERPT: James Allen, “Time and Time Again” – Allen’s relational diagrams describe all possible relations among time intervals according to a logical framework. These temporal logics are used to represent temporal information that cannot always be correlated to an absolute dating system (extrinsic) and may be ordered according to pseudo-dates (intrinsic). His system accommodates forward branching, a desirable feature for computational situations in which a single, determinate past may have multiple future options and where undesirable orderings may result if these are forced into a single linear system. Allen’s logical relations:

- before
- meets
- overlaps
- during
- starts
- finishes
- equals

- Linguists conceive of time as represented in linguistic forms, the modal expressions of tense (they are referred to as “tensors”).

EXCERPT: Mark Steedman, “The Productions of Time,” summarizes his own and others’ work in the area of tense logic or tense modality in language. He incorporates the classic work of (aptly named) A.Prior in his discussion of speech points, reference points, and event points within linguistic representations, but contributes his own vocabulary of fundamental temporal modalities to describe states of temporality:

- achievements – at or in a particular period of time
- activities – for a set period of time
- accomplishments – extended in time
- points – temporal mode with no extensible duration

He examines these in relation to the idea of transitions from one state to another as consequent or progressive states in which all type-changes can be described in a sequence of preparation, event, and consequent. Steedman’s works in the context of AI, knowledge representation, and information science.

Vocabulary of Conceptions of Time: Conceptual frameworks for describing various conceptions of time come from a range of disciplines. This list provides a basic vocabulary from natural sciences, humanities, philosophy, logic, and linguistics.

EXCERPT: J.T. Fraser, a prolific scholar on the topic of time, compiled the following list of conceptions of time (see Fraser’s short article, “From Chaos to Conflict”):

- Eotemporality (eos: goddess of dawn)

The rational progression of temporal events in apparently sequential form

- Nootemporality (noos: thought/mind)

Time as perceived by the human mind

Psychotemporality: Perceived time, psychologically inflected

Sociotemporality: time proper to a specific social system or condition

- Biotemporality – future/past distinctions operate within continuity

Organic present (“banana-now time”)

Circadian (24-hour rhythms)

Life cycle of an organism: Birth/growth/maturation/death

- Atemporality – physics, simultaneous, chaotic, unordered
- Prototemporality – undirected and discontinuous, primary elements

In addition to Fraser’s list:

- Discursive temporality: The representation of time in discourse
 - Linguistic structures – tense modalities (Steedman)
 - Palimpsestic – layered temporality in narrative (Jordan)
 - Systematic temporal relations among non-linguistic elements (Kubler)

Informatics and Temporality

Time and temporal relations are crucial aspects of information processing in two ways. The synchronization of activity within any information processing system poses complex problems for coordinating the local time of an event within a circuit and a global clock time for a system. This aspect is not relevant to our project in its current phase, though clearly such concerns are germane to the larger issues of information design that undergird our research. The second aspect addresses the history of data and the history represented by data within an information processing environment. This aspect is directly relevant to our project and a glossary of terms has been excerpted to serve as a standard vocabulary within our research project and for the seminar.

EXCERPT: C.S.Jensen et al., "Glossary for Temporal Database Concepts"

Valid Time (moment at which the fact is true within the modelled reality)

Transaction Time (moment at which the fact is stored in the database)

Query Time (moment at which a database is queried)

User-defined Time (birthday, hiring date)

Snapshot

Valid Time Relation

Transaction Time Relation

Snapshot Relation

Bitemporal relation

Transaction time slice operator

Temporal Element

Chronon: smallest unit in any time system

Time stamp

Event

Lifespan

Temporal homogeneity

Interval

Span – directed duration

Temporal expression – syntactic expression used in a query

Readings:

C.S. Jensen et.al., "Glossary for Temporal Database Concepts"

Qing Zhou and Richard Fikes, "A Reusable Time Ontology"

Fabio Schreiber, "Is Time a Real Time?"

Visualizations: Archive and Projects

We have grouped our visualizations into metaphors, time-keeping devices and schemata, an archive of graphic representations, and a project gallery of diagrams that conform to the time ontologies and temporal relations outlined in the previous sections.

Visualizations of temporality divide into three areas:

- **Metaphors**
Representations of time as Chronos, the flowing river, as a clock with wings, as a blown-out candle whose smoke marks the ephemerality of human existence, an hourglass, Oroborous as the image of an endless cycle, and so forth. Iconographically rich, these images lack the abstraction essential for generalized schemes of representation.
- **Timekeeping devices and schemes (extrinsic and intrinsic)**
The conventions used in timekeeping devices are repurposable for conceptualization and display of temporally marked data as well as temporal relations. These devices consist of clocks, calendars, and various calculating and record-keeping systems (volvelles, sundials, astronomically cued structures and systems). Timekeeping devices and schemes provide REFERENCE FRAMES for representation of temporal relations either within data sets or between data and extrinsic time systems.
- **Archive of Graphic representations of temporal relations**

Descriptive captions from the original sources have been maintained. The captions we have added name the features of the images that will form the standard graphical vocabulary for temporal modelling in our project templates.

- The basic categories are linear, planar, spatial representations.
- These may contain bivariate or multivariate information axes.
- Temporal direction is almost always unidirectional/asymmetric.
- Reference frames are either extrinsic to the system (assuming an objective time framework) or intrinsic to it (based on relations) or some combination of these.
- Notation system contain markers for points (discrete moments), intervals (segments of time), and events (occurrences in time).

Linear

- (Spectrum of biological cycles, from **Fraser**)
Linear, unidirectional/asymmetrical timeline with extrinsic time frame and multiple granularity scales.
- (Hydrocarbons from **Tufte**)
Linear time line in 2.5 dimensions (orthographic). Data shown in continuous display cut snapshot mode. Information is mapped onto a topographic plane. Extrinsic time frame.
- (**Schreiber** – last diagram in the article)
Linear, unidirectional/asymmetrical timeline with cyclic time progression/repetition wrapped around it for correlation. No time frame indicated.
- **Bronstein** (time lines with Judeo-Christian emphasis, also, the **Karl Jasper's** axial timeline)
Linear time, 2-dimensional, but inflected by ideological considerations. Time frame is largely event driven.

Calendar – an idiosyncratic planar graphical schema

(Mayan/Julian from Fraser) Planar convention, implies unidirectional asymmetry but accessed topographically. Two extrinsic time frames (Mayan/Julian) put into correspondence. Uniform but non-specific granularity (metric of the table has arbitrary semantic value).

Bivariate and Multivariate Tables

- **Marey (from Tufte)** Bivariate table with discrete data points (place names on vertical axis) and continuous data (time progression on horizontal axis). The metric of the diagonal lines allows differences in speed to register (though this feature is not taken advantage of here) – presumably these trains travelled at more or less the same speed.) Extrinsic time frame. Uniform granularity.
- **Circadian Rhythm (Fraser)** Bivariate table with both extrinsic (days/hours) and intrinsic (periods of wakefulness/sleep) time frames. Notation system marks intervals as well as points but within a uniform granularity.
- **Biological cycles (Fraser)** Multivariate table with five data types mapped on two temporal axes, extrinsic time frames, uniform granularity.
- **NY Times weather image (Tufte)** Multivariate table using one axis for correspondences (horizontal) and multiple values on horizontal axis for precipitation, temperature, humidity data. Precipitation indicated in discrete units, temperature and humidity in continuous mode. Extrinsic time frame.

Bar Graphs

- **Life line (from Lifeline article)** Multivariate table, uses intervals and events, extrinsic timeframe.
- **Reigns of Kings (Tufte)** Bivariate table, uses intervals, and embodies the “dividing instant” problem.

Dials:

Dials seem most useful when multiple variables need to be calculated in relation to each other, as in the case of the astronomical/astrological volvelles shown in the second image here, where correspondences can be visually demonstrated through rotation. Otherwise, the dial serves a metaphoric purpose, as in the first image.

- **Cyclic representation of timeless, universal cycles (Thames and Hudson)** Hierarchical structure internal to the cycles
- **Calculation tools** Multiple sidereal/astronomical/astrological cycles graphed against each other for calculation. Multivariate, interval-based, multiple granularities, and extrinsic time frames.

Maps

- **March of Napoleon (Tufte)** Spatial-temporal date integrated into single narrative made into topographic image. Extrinsic time-frame. Single granularity. Topographic template serves both literal (geographic advance) and metaphoric (size of army) purposes.

Drawings

- **Chris Ware** Multiple time-lines in tree/branching flow-chart capable of indicating several sequences of events simultaneously. No extrinsic time frame indicated in this example. Intrinsic relations determined by linking.

Temporal Relations Diagrams

The issue here is not the linear/planar distinction, but the graphing of relations within an assumed asymmetric temporal experience.

- **Allen**'s diagrams are standards in the field for showing logical relations.

- **Steedman's** (derived from **Reichenbach**) add a useful notation system for discourse analysis.

Hyperspace

- **Minkowski** Diagram

This description is taken from **Schreiber**:

“First, time loses its privileged position as the independent variable for describing natural phenomena, while only a four co-ordinate space-time continuum is used to express the physical laws; second, each event (a point in space-time) is the vertex of a twofold cone which contains the past and the future of the event itself. Points which belong to trajectories (world lines) lying within the cone are related to the vertex event by a precedent relation, which expresses causality. Points outside the cone are simply “elsewhere” and cannot be causally related to the event; they are independent of the event or concurrent with it. Therefore, any interaction between two events can only occur within the intersection of their light cones.”

- **Fraser – Time Dilation**
(link to article)

Projects: Ontologies and Temporal Relations

- Time Lines: graphs, sliders, dials, variable scale/granularity, palimpsests
- Time Planes: Topographies
 - charts (calendars, tables, multi-variate graphs)
 - topography (flow charts, trees, story spaces)
- Time Spaces 3, 4, and N-dimensional
- Reference Frames
 - Extrinsic: references: sidereal, physical, cultural, biological, time-stamped
 - Intrinsic: discursive structures: relationally defined and constrained
- Notation Systems – causality, etc.

Theme: Cultural and Cross-Cultural Concepts

Western Culture:

The various philosophical conceptions of time with which we still operate for the most part (that is, that we use in a day-to-day commonsense way and also within most empirical-seeming schemes for organizing data) were fairly well defined by about the 5th century AD. The exception is the idea of space-time in 20th-century theory of relativity.

SUMMARY: Mainly from **Schreiber**, with additions from **Fraser** and others.

Greek, Roman, and many non-western conceptions of time are cyclic and repetitive. In the work of **Heraclitus**, for instance, birth and death are part of an endlessly repeating cycle in the natural, as well as human, world that leaves the substance of the universe unchanged.

Many cosmological systems, such as **Pythagoras's** notions of number and measure, have been understood as timeless truths. In opposition, though not necessarily in contradiction, to this concept is that of ceaseless change (**Heraclitus**).

The Old Testament, from the very first word, "In the beginning," establishes a linear, progressive concept of time known as "salvation time" in anticipation of a messiah not yet come.

Christian salvation time demarcates human history in reference to Christ as the messiah.

Plato understood time as a product of the revolution of the celestial spheres – universal and absolute.

Aristotle, by contrast, understood time as an aspect of movement, as the numerable aspect of motion designated by "before" and "after" and quantifiable within consistent systems of measure. Time in his conception is infinite, open, and continuous.

An **atomistic** conception of time allows for no beginning point, and sees the future as closed.

Tense logic, or modal logic, conceives of time in terms of possibility (sometime) and necessity (always or never), thus linking time with causality.

Augustine considered time a function of human mind within which only the present was real.

Kant linked time to internal and space to external sensibility as fundamental modalities of human understanding or intuition. Time does not organize the senses, but is presupposed by them.

Newton established modern mechanics on the basis of time as an absolute, mathematical entity, "an independent variable used to describe the laws of mechanical systems."

Leibniz emphasized order relations without any objective stability.

Einstein's conceived of time as an atemporal spacetime, spatial and symmetric rather than linear and asymmetric, and of temporal relations as dependent upon frames of reference within that "block" of time.

Systems of time-keeping also embody cultural distinctions. Just a few examples are cited for the sake of demonstration: **Babylonian and Greek** time-keeping marked the beginning of the day at sunrise, **Egyptians** marked the day from midnight to midnight, the **Julian** calendar starts the day at sunset, and until **1925, astronomers's** clocks went from noon to noon, after which they switched to midnight as the start/end point. Nor have divisions in the days always relied upon regular intervals. A most sensible alternative was employed in **medieval monastic society** where the day was divided into 12 units of daylight and 12 of darkness whose dimensions varied according to seasonal cycles. (See **Fraser, Time the Familiar Stranger**).

Historical periodization introduces an interpretive overlay that is largely premised on a concept of time as continuous and uni-directional. Periodization schema impose ideological frameworks on temporality both by the divisions into discrete eras or epochs presumably demarcated by changes in cultural paradigms and by the use of significant events by which these divisions are marked.

SUMMARY: **Herbert Bronstein**, "Time Schemes, Order, and Chaos: Periodization and Ideology," Bronstein points out the ideological aspects of various conceptions used to periodize history. He begins with discussion of repetitive cyclic conceptions and the implications inherent in a notion of eternal being, then addresses **Judeo-Christian salvation time** in which the appearance of the Messiah serves as organizing feature of all historical events, the western historian's conceptions of progress in a time scheme identifying ancient, medieval, and modern eras, and a modification of this latter in the work of **Karl Jaspers**, from his work, The Origin and Goal of History. Bronstein's work adds a layer of analysis that calls attention to the non-neutral character of all schema for temporal conception as an organizing interpretive frame for the description of human experience or historical events. Each of these schemes embodies a world-view, laden with a value-system and sense of progress towards or away from a culturally sanctioned goal (progress, enlightenment, salvation, rebirth, etc.)

Cross-cultural perspectives demonstrate the biases inherent in the concepts of temporality that we take to be intuitive and which serve to organize our social relations into a network of cultural activities in accord with assumptions not universally held within belief systems outside the Euro-centric perception. The relevance of such alternate perceptions to humanistic scholarship requires attention to differences in fundamental concepts of time as well as means of calculating correspondences among distinctly different time-keeping schemes. This topic will be introduced in the seminar workshop by anthropologist **Ira Bashkow**.

Images: from **Schreiber and Bronstein**

Reading:

- **Fabio Schreiber**, "Is Time A Real Time?"
- **Herbert Bronstein**, "Time Schemes, Order, and Chaos: Periodization and Ideology"

Theme: Geospatial Temporality

The use of maps as either representation of an actual, physical space or as a way to organize information in a cognitive scheme allows for spatialization of relations among elements of a temporal system for the purposes of interpretation. The conventions of mapping, largely 2-dimensional with occasional partial representation of 3rd dimension for emphasis or legibility of data also allow for narratives of human experienced to be "mapped" according to spatial coordinates. These coordinates may correspond to any designated variable (private to public, birth to death, brief to lengthy) so that the organization of a planar spatial representation may be organized in topographic terms even if it represents something other than geographical space. The conventions and evolving systems for geospatial representation of databases thus has considerable potential for humanistic

interpretation, specifically with respect to data visualization. We have barely touched on this topic so far in our research, and the issue will be explored further in the seminar workshop through a presentation by **Francesca Fiorani**.

SUMMARY: **Agnar Renolen**, "Temporal Maps and Temporal Geographical Information Systems (Review of Research)" Mapping conventions in static media have been expanded by the capabilities of time-based media for display of change in landscapes over time. Animated maps, capable of showing transformations along a specific time-scale, introduce possibilities for information display that may coordinate information along numerous axes, not merely in a simulation of 3-dimensional space progressed along a time-axis as the 4th-dimension. Non-spatial information, or attribute data, may be readily accommodated within these schemes. Underlying premises for the organization of temporal data divide into two categories: the notion of time as continuous (and thus represented by real numbers) and that of time as composed of discrete moments (representable by natural numbers). Changes in any attribute may be graphed in one of the following three ways: as a change of state (a stepwise-constant), a recording of discrete values (at any given moment, usually according to fixed intervals), and in continuous values (uniformly, smoothly, or irregularly graphed depending on the input source and the degree of interpolation among data points). Renolen's overview provides a useful introduction, and is particularly suggestive for our work when it touches on **Gail Langran's** discussion of alternatives to a single predecessor/co-existence/successor model of visualization through the mapping of more complex states.

Image: **Hagerstrom**

Reading:

- **Agnar Renolen**, "Temporal Maps and Temporal Geographical Information Systems (Review of Research)"

Theme: Narrative Theory and Discourse Analysis

In our introductory section, we touched on two different approaches to the analysis of temporal relations that may be elicited from linguistic (or other) discourse into a formal system. **James Allen's** temporal relation diagrams represent the "detenser" approach grounded in formal logic which assumes the possibility of showing relations outside of natural language constraints. **Mark Steedman's** work was cited as an introduction to various investigations into tense modalities, the "tenser" approach grounded in linguistic analysis. Such approaches are not irreconcilable, and the goals of both are extremely valuable for the analysis of temporal relations in humanistic inquiry where time-stamped data may be only a small portion of the information to be analysed and represented.

Deixis: the concept of deixis comes from structural linguistics as applied to narrative and literary theory. **Deixis refers to the way subjectivity (individual speaker identity and position) is structured in language.** Discourse markers, such as concepts of "here" and "now" point towards subject positions in space and time as referred to, but also, as inscribed within narrative or linguistic form. Though classical narrative -- as defined by Aristotle's three unities of time, place, and action -- assumes that time and space are universal, continuous, and coherent, such assumptions are not part of all narrative frameworks. Self-conscious manipulation of these unities is a part of 20th century literature under the influence of the theory of relativity, but earlier forms of literary expression also demonstrate

significant alternatives to these presumed unities – and to the unity of subjectivity as well. This topic will be discussed in the workshop seminar by literary scholar **Maura Tarnoff**, a member of our research team.

An extensive literature exists on the study of tense modalities within linguistics, and in some cases, with direct application to narrative theory and study. We chose to focus seminar workshop discussion on a specific case study, the **William Faulkner short story, “A Rose for Emily,”** since this work has received considerable critical attention for its temporal structure (and inconsistencies) within traditional literary studies and has also been used to develop an analysis in constraint logic programming (a subset of Prolog).

SUMMARY: **Jennifer Burg** and **Sheau-Dong Lang**, “Using Constraint Logic Programming to Analyze the Chronology in a William Faulkner Story,” encode the narrative elements of the story by setting up a system of internal references for temporal relations. By giving each event in the narrative a code and constraining its temporal identity in a formal system, they are able to extract an ordered sequence from the temporally disordered elements of the narrative.

SUMMARY: **Pamela W. Jordan**, “Determining the Temporal Ordering of Events in Discourse,” summarizes “the models that have been proposed for determining the temporal ordering of events in discourse.” This work addresses distinctions among narrative reference frames and the tense indicators in syntax and discourse structure. Conceived within an information science perspective, this work is particularly suggestive in its potential application to analysis of the documents central to humanities scholarship.

Images: Allen Diagrams, Steedman’s diagrams (Prior’s and his own)

Readings:

- **Jennifer Burg** and **Sheau-Dong Lang**, “Using Constraint Logic Programming to Analyze the Chronology in a William Faulkner Story”
- **Pamela Jordan**, “Determining the Temporal Ordering of Events in Discourse”

Postscript: Relativity

The theory of relativity modifies traditional concepts of time. While the fourth dimension was a feature of classical physics, according to the theory of relativity, time cannot be described in stable and universal terms simply by adding a fourth dimension (time progression) onto three-dimensional coordinate systems. Time is a reference frame. Thus no universal time-frame exists. Therefore, objects moving at different speeds and in different locations experience time differently. Teri Reynolds writes, “no frame-independent matter of fact about the separate spatio-temporal locations of an event.” The term spacetime is specific to the theory of relativity and refers to the conception of time in spatialized terms. In this system, the “now” we experience in conventional concepts of temporality should be understood to be analogous to the way we understand “here” in spatial terms. “Now” is a reference point, not the edge of a moving line or point of “time’s arrow.” From the point of view of relativity, the temporal asymmetry (the illusion of a forward moving, linear, uni-directional temporality) that underlies most human perceptions of time is shown to be a construction of our experience and perceptual apparatus, not an aspect of the physical universe. The implications of this theory for physics focus particularly on debates about the second law of thermodynamics (the tendency of chaos to increase in the physical universe along an apparently asymmetrical temporal axis). In narrative imagination, the theory of relativity provides suggestive starting points for reordering of the perception of human experience within such tropes as those found in Flann O’Brien’s *The Third Policemen*, Alex Lightman’s *Einstein’s Dreams*, and

perhaps, though he will have to address this himself in our seminar, David Blair's *Wax, or the Invention of Television Among the Bees*.

Image: **Minkowski** Diagrams and Fraser

Readings:

- **Mary O'Toole, "The Theory of Serialism in *The Third Policeman*"**
- **Huw Price, "The View from Nowhen"**
- **J.T.Fraser, Appendix One: Time Dilation, *Time the Familiar Stranger***
- **Teri Reynolds, "Spacetime and Imagetext"**

Project Summary of Concepts and Vocabulary that require Representational Strategies:

These concepts have been culled from sources that address time and temporal relations. They provide a basic framework for our project, and provide the intellectual foundation for the graphical system we are trying to establish. Any system of time modelling will need templates and metaphors that express:

1) Temporal Ontologies: Universal Time (Absolutist) vs. Logic of Temporal Relations (Relativistic)

(Example: Universal time, like universal space, is conceived of as infinite, unbounded, and of encompassing dimension. Relative time, like relative space, is proper to a specific system and exists in relation to universal time, but independent of it. An example with respect to space: Earth follows an orbit around the sun, the solar system moves through the galaxy, each of these is conceived to exist within the infinite universe. Meanwhile, the space within a room is daily reconfigured by its occupants. The space in the room is a relative space that exists in relation to, but independent of, the universal space. Likewise, the gestation period for mammalian offspring is a fixed period, independent of the moment of its origin in universal time. The cycle comes into being, maturity, and completion regardless of the point in the linear, irreversible order of time in which it originates. See: **Christensen, Space/Time book.**)

2) Time Primitives for Time Lines, Planes, Spaces

points: discrete or interpolated

The Dividing Instant Problem is a special case of the point in time, and refers to the idea that an instant that exists at the juncture of one interval and another is the instant that “divides” the two and thus belongs to both simultaneously.

intervals: bounded or unbounded (indeterminate origin, termination, duration)

events

absolutist: time ontologically precedes events

relativist: events precede time ontologically

3) Time Topologies for Time Lines, Planes, Spaces

Order relations:

Total: linear

periodic (closed/open)

Partial: branching (determinate past, open future)

Non-ordered relations:

Space-time: matrix/field

Minkowski – lightcone of events

4) Time Metrics: Reference Frames, Units, and Granularities for Time Lines, Planes, Spaces

Extrinsic: Extrinsic time frames reference conventional systems of time keeping

Astronomical/sidereal (changes of state/position)

Geological (changes of state)

Physical (1/2 life of elements)

Calendars (cultural reference frames)

Time pieces (micro-cultural reference frames)

Intrinsic:

Temporal relations:

event

utterance

reference

Intrinsic time frames create a frame of reference within a system for the purpose of establishing temporal relations.

absolute: past/present/future

relative: then/before/now/after/when

the “now” moment as point of reference

Extrinsic and intrinsic systems may be integrated or a system of correspondence may be established to allow them to be represented in relation to each other.

Extrinsic time can be linked to a dates while intrinsic time may, but need not, depend upon pseudo-dates (e.g. “Before such and such”).

5) Notation Systems

Causality assessment (causality not equal to precedence relation)

Now moment marker and other diectic elements

Bibliography/Materials: Recommended Reading Selection:

This list is organized in order of usefulness to discussion in the seminar. The primary articles are numbered 1-5. If you have limited time, we recommend that you read the articles in order of the list. For clarity of organization, secondary articles that expand on these primary articles are listed with A or B

designations. Themes are indicated in parentheses to orient your reading choices.

- Fabio Schreiber, "Is Time a Real Time" (cross-disciplinary overview, informatics oriented)
 - 1-A. James Allen, "Time and Time Again" (formal logic/informatics)
 - 1-B. Mark Steedman, "The Productions of Time" (linguistics/discourse/informatics)
- 2) Herbert Bronstein, "Time Schemes, Order, and Chaos: Periodization and Ideology" (history, cultural studies)
 - Agnar Renolen, "Temporal Maps and Temporal Geographical Information Systems (Review of Research)" (geospatial information systems)
 - Jennifer Burg and Sheau-Dong Lang, "Using Constraint Logic Programming to Analyze the Chronology in a William Faulkner Story" (discourse analysis/informatics)
 - 4-A Pamela Jordan, "Determining the Temporal Ordering of Events in Discourse" (discourse analysis/informatics)
- Mary O'Toole, "The Theory of Serialism in *The Third Policeman*" (literary studies)
 - 5-A Huw Price, "The View from Nowhen" (physics/philosophy)

Other useful references in the seminar materials posted online:

C.S. Jensen et.al, "A Glossary of Temporal Database Concepts" (informatics)
 Qing Zhou and Richard Fikes, "A Reusable Time Ontology" (informatics)
 Teri Reynolds, "Spacetime and Imagetext" (literary theory/physics)

Appendix 5: Umwelts

Umwelts			
Atemporality	Concepts of past, present and future do not exist, nor do those of before and after		Music=vertical
Prototemporality	Events are not necessarily simultaneous, but their temporal position is distinguished only statistically		Music=Moment
Eotemporality	Causation	Cause and effect, symmetrical	Music=multiply-directed time
Biotemporality	Distinguishes past,present,future	Differentiates between beginnings and endings	Musical=nondirected linear time; one event progresses to another > no large scale-sense of direction
Nootemporality	Personal identity and free will	Beginnings and endings remembered and anticipated	Music=linearity
Sociotemporality	Cultures and civilizations	Music=no formal metaphor > (omitted)	

Temporality	Music
Atemporality	vertical
Prototemporality	Moment
Eotemporality	multiply-directed time
Biotemporality	nondirected linear time; no large scale-sense of direction
Nootemporality	linearity
Sociotemporality	no formal metaphor > (omitted)

After Kramer, 1988, p. 394-7

list of umwelts
19:2:02

temporal level		analysis		
von UexKull		FRASER temporality		KRAMER
Umwelt 1	Atemporal	Now	Concepts of past, present and future do not exist, nor do those of before and after	Vertical
Umwelt 2	Prototemporal	First time	Events are not necessarily simultaneous, but their temporal position is distinguished only statistically	Moment
Umwelt 3	Eotemporal	Cause/effect	Cause and effect, symmetrical	Symmetrical
Umwelt 4	Biotemporal	Starts/Ends	Distinguishes past,present,future Differentiates between beginnings and endings	Non-directed Linear
Umwelt 5	Nootemporal	Personal	Personal identity and free will Beginnings and endings remembered and anticipated	Linear
Umwelt 6	Sociotemporal	Cultural		Hyper linear

list of umwelts and comparative hierarchies
13:2:02

temporal level		analysis					example	
von Uexküll		FRASER temporality		KRAMER	SCHENKER SCHICHTEN	EPSTEIN	MUSIC	COMPOSER
Umwelt 1	Atemporal	Now	Concepts of past, present and future do not exist, nor do those of before and after	Vertical	Ursatz	N/A (pitch)	Fragments	Nono
Umwelt 2	Prototemporal	First time	Events are not necessarily simultaneous, but their temporal position is distinguished only statistically	Moment	Bassbrechung	Beat/Pulse	<u>Momente</u>	Stockhausen
Umwelt 3	Eotemporal	Cause/effect	Cause and effect, symmetrical	Symmetrical	Urlinie	Measure/Motive	<u>Its Gonna Rain</u>	Reich
Umwelt 4	Biotemporal	Starts/Ends	Distinguishes past, present, future Differentiates between beginnings and endings	Non-directed Linear	Vordergrund	Hypermeasure/Phrase	<u>Variations</u>	Reich
Umwelt 5	Nootemporal	Personal	Personal identity and free will Beginnings and endings remembered and anticipated	Linear	Mittelgrund	Melodic (song)	<u>From the Air</u>	Anderson
Umwelt 6	Sociotemporal	Cultural		Hyperlinear	Hintergrund	Cadence (symphony)	<u>Shaker Loops</u>	Adams

Appendix 6: Poème Electronique

Treib, Marc and Felciano, Richard. Space Calculated in Seconds: The Philips Pavilion, Le Corbusier, Edgar Varèse. (Princeton University Press, 1996).

p. xiv: 'a synthetic work of art that integrated the properties of color, sound, light, and rhythm.'

p. xv. '...color is itself a plastic reality.' (Leger)

p. 11. Rather than face unfavourable product comparisons, Kalff offered a novel strategy: there would be no commercial goods on display in the pavillion. Instead, an international team comprising an artist, an architect, and a composer would create a pavilion utilizing electronic technology in the service of the arts - presenting Philips as a progressive, benevolent multinational corporation.

P. 14. By early summer Rietveld's participation in the pavillion's design had evaporated.

p. 15. Xenakis/modulor/'Metastasis': "Among all the geometrical progressions, there is only one whose terms possess this additive property. It is the progression of the Golden Section." More germane to the forming of the Philips Pavilion, Xenakis's graphing of the string glissandi of 'Metastasis' resembled the ruled surfaces of hyperbolic paraboloid shells.

pp. 23-4. Although Le Corbusier balanced the straight and the curved line in his purist paintings, in the world of his early architecture the orthogonal prevailed.

p. 33. One beauty of the [hyperbolic paraboloid] mathematical form was its fluid development into a three-dimensional volume from a two-dimensional shape, thereby implying a movement or unfolding over time. Space-time had been a critical ingredient in the formulation of modern architecture; the hyperbolic paraboloid thus suggested a means to overcome the limitations imposed on flowing spaces by the orthogonality of the box.

Treib p. 49 - 'Since the projectors would be fixed-and this was before the era of zoom lenses-all movement and variation in size had to be accomplished in the filming.'

p. 98. This work, intended to be a new genre, would utilize, publicize - and stimulate - the technical potential of the Philips corporation, and would synthesize light, color, sound, and rhythm. [...] The single element all four pieces had in common was time, which provided the base upon which the spectacle would be constructed.

p. 144. As early as 1931, Rene Clair raised an issue still relevant twenty-five years later at the time of the Varese-Le Corbusier collaboration: 'If the use of sound must be limited to those normal sounds corresponding exactly to the images which the eye sees on the screen, the enrichment is quite poor, because the mind is quite quick to hear internally that which the senses do not perceive.'

p. 147. 'Cinema and architecture are the only two contemporary arts,' Le Corbusier told an interviewer in Moscow, and for his kinetic play of photographs in Brussels, he relied on the lessons that Eisenstein had taught.

p. 147 'this striking word is "montage", which means "assembling," and though it is not yet in vogue, it has every qualification to become fashionable. [...] Let 'units of impression combined into one whole' be expressed through a dual term, half-

industrial and half-music-hall. Thus was the term "montage of attractions" coined. Eisenstein.

p. 148. The cinematic state operated on five levels-metric, rhythmic, tonal, overtone, and intellectual; these were purely physiological, however, and were intended as the means to the psychological end.

p. 149. In his classic study from 1916, 'The Film: A Psychological Study, Münsterberger first investigated the way in which image and reality were perceived by the deceiving mechanism of the motion picture camera. Of course, there was no motion in any of the frames, but in their combination, "the motion which [the viewer] sees appears to be a true motion, and yet it is created by his own mind." Thus, the motion in film-and the world it conveyed-were just a psychological construct.

p. 153 Varese had also extended the definition of rhythm, noting that it was "too often confused with metrics":

'Cadence, or the regular succession of beats and accents, has little to do with the rhythm of a composition. Rhythm is the element of music that gives life to the work and holds it together. It is the element of stability, the generator of form. In my own works, for instance, rhythm derives from the simultaneous interplay of unrelated elements at calculated, but not regular, time-lapses. This corresponds more nearly to the definition of rhythm in physics and philosophy as a succession of alternative and opposite or correlative states.'

Appendix 7:

Rhythmic modes

Patterns of temporal order abstracted by 13th-century theorists from Notre Dame polyphony; above all, the discant clausula.

There are six modes, each with its own characteristic foot or combination of long (L) and short (B) notes.

The latter half of the 13th century saw the gradual dissolution of the modes as the breve was broken down, in the triplum of the motet, into ever smaller values - at times up to seven semibreves. If the tenor and the duplum still appeared on the page as modal, the ear did not perceive them as such, so extended had both the longs and the breves become.

1. L B [1, .5] trochaic
2. B L [.5, 1] iambic
3. L B B [1.5,.5,1] dactylic
4. B B L [.5,1,1.5] anapestic
5. L L [1.5,1.5] spondaic
6. B B B [.5,.5,.5] tribrachic

[source: Randel. Harvard Concise Dictionary of Music and Musicians.
London: 1999. pp. 425-6]

Appendix 8:

Log of correspondence between Rob Doyle and Robert Fripp.

1. 020123 Letter to David Cross

Dear David,

Thanks for your time talking on the phone today, and for agreeing to pass on a request regarding my postgraduate research to Robert Fripp.

It seems appropriate for me to clarify some aspects of our discussion in a few (!) words here.

- My PhD research has led to an interest in the creation of soundscapes, with particular interest in relationships between improvisation and composition foregrounded by the work of Robert Fripp.
- Having expressed my intentions to refer to the work of Mr Fripp, my supervisor, Dr Susan Broadhurst, agreed that the possibility of approaching the musician with the aim of providing primary research material would be of considerable value to my PhD.
- The possibility of making such an approach via yourself was encouraged.
- I understand that my approach may be turned down for a multitude of reasons, but trust the outcome will aid the heuristic progress of my research.

I enclose for your interest:

- Title of thesis
- Notes for a research seminar scheduled for 20:2:2002

Yours,

Rob.

2. 020123 Letter to Robert Fripp

Dear Robert Fripp,

I am conducting research to provide background and evidence for a Ph.D. thesis.

The subject area of my research focuses in part on the creation of soundscapes.

I respectfully request your help in providing research material, perhaps in the form of an interview of some kind.

In order to provide a context for my request, I enclose:

- Title of thesis
- Notes for a research seminar scheduled for 20:2:2002

Yours,

Robert Doyle

(postgraduate student, Brunel University).

Thesis title: Tempomorphism (short-term changes in subject-perception of temporality in the experience of music): towards validating nested temporalities in perceived experiences of music

NB Tempomorphic = tempo (speed of time) + morph (change)

PhD research area, Brunel University.

Rob Doyle

Supervisor: Dr. Susan Broadhurst

18:5:2001

3. 011022 Questions for Robert Fripp

Some questions intended to provide research material for inclusion in my Ph.D. thesis.

- To what extent has an awareness of right brain/left brain cognisance had upon personal approaches to technique, musicianship, and pedagogy?
- Is there a conscious effort to attain 'being' as opposed to 'becoming' reflected in personal musical output?
- Does improvisation suggest a necessity for composition?
- To what extent does signal processing (such as digital delay) provide compositional or improvisational structure?
- To what extent does the (economic) structure of organizations such as the Global Discipline Mobile support artistic creativity in the marketplace?

4. 020610 email from RF to RD 'duration is subjective!'

dear rob,

many thanks for your interest & outline of your thesis. right now my attention is on reorganising my life professionally (dgm & kc), musically (kc recording) & personally (moving house & home). so i have little to say on the subject of just about anything else!

duration is subjective [1a]

&

creative time is experienced as instantaneous [1b]

&

gradual transitions take place suddenly [1c]

get to the point briefly! the notion of the extended/expanded present moment is an important one [2a], but is only available to practising; that is, a theoretical presentation is of little value. [2b]

may i refer you to the work of anthony blake? his Seminar On Time might be use, although his more recent work is exceptional. [3] if you use google you'll

end up with some interesting connections. if you would like to take that further, i'll connect youj to anthony.

AGE Blake
duversity

good luck!

vb, r.

5. 020614 email from RD to RF 'thanks, permission, and clarification'

Dear Robert

thankyou for getting back to me complete with observations and suggested course of research, especially at such a busy time for you!

May I have your permission to refer to/quote from your last e-mail in my future academic efforts?

I would value clarification regarding: 'the notion of the extended/expanded present moment is an important one, but is only available to practising; that is, a theoretical presentation is of little value.'

- I am uncertain as to whether you refer to 'one who practices' or something like 'in the experience of practice'.

- Although I understand I am able to include practical research a substantial component of my final thesis, I fear I am obliged to argue for a convincing theoretical presentation despite agreeing with your observation of it's value!.

An initial google search for AGE Blake suggests a promising area of research, and reminds me of the (largely unknown to me) relationship between Gurdjieff, Bennett, and yourself.

best wishes for your professional, musical and personal reorganisation!

thanks again for your time and response,

Rob.

6. 020619 email from RF to RD 'the story of time so far'

rob - the story so far...

Duration is subjective

&

Creative time is experienced as instantaneous

&

Gradual transitions take place suddenly.

Get to the point briefly! The notion of the extended/expanded present moment is an important one, but is only available to practising; that is, a theoretical presentation is of little value. May I refer you to the work of Anthony Blake? His Seminar On Time might be use, although his more recent work is exceptional.

And, from The Late Shift yesterday, these reflections on time:

The use of time is one way of judging the quality of a person. [4]
Music is a language that expresses all kinds & qualities of time, and our experiencing of them. [5]

[5.1] Four common expressions: time, timing, time signature, tempo.

[5.1a] Time - a connection to the universal; bad time in a player indicates too great a subjectivity.

[5.1b] Timing - stressing & emphasising the continuities, discontinuities and contradictions of time;

[5.1c] Time signature - ordering our experience of the unfolding of time;

[5.1d] Tempo - our experience of the flow of time.

[5.2] Exercises relating to our experiencing of time:

[5.2a] Stopping time;

[5.2b] Extending time;

[5.2c] Connecting to the whole of a present moment.

[5.3] Our experience of time is different in each of the 'worlds'. So, depending upon our personal center of gravity, or 'world' we live in, our experience of time will be very different. The distinctions/qualities of musicianship - genius, master, craftsman/professional, journeyman/apprentice - confer different capacities of experiencing. Something like:

[5.3a] Genius - instantaneous;

[5.3b] Master - holds the moment as one; that is, connected to the expanded present Moment;

[5.3c] Craftsman - experiences the flow of time as it unfolds;

[5.3d] Journeyman - moves into & out of time. Experiences time as being overwhelming. Swept along by the stream of time. A captive of expectation and history.

This implies that we may practice deepening our experience of time by developing our 'being' or personal state. [5.4a] The greater the intensity of our presence, the greater our sense of process as a present moment; or 'chunking' of discrete moments into a unified event. [5.4b]

This is better addressed in a practical context & Guitar Craft is the best opportunity I know of. [5.5]

If any of this is of use to you, please feel free to do so.

vb, r.

7. 020703 email from RD to RF 're: the story of time so far...'

3:7:02

>Dear Robert,
some very clear thoughts and suggestions for me to ponder!

My initial observations on reflections from the Late Shift:

- hierarchical systems keep appearing in my area of research!
- I'm struck by comparisons you make regarding experiential capacities of 'genius, master, craftsman/professional, journeyman/apprentice' and the nested temporal hierarchy of atemporality, eotemporality, prototemporality, biotemporality, and nootemporality described by JT Fraser.

Recent discussions regarding the course of my research at Brunel suggest the inclusion of a practical element in my final thesis: I'm at present uncertain as to how this might be structured, but am aware that in practical research to date (composing/performing/recording) I have focussed on particular or combined elements of the 'exercises relating to our experiencing of time' you mention. 'Connecting to the whole of a present moment' seems appropriate to the process of soundscape improvisation/performance, lending an eloquence to that methodology which has until now escaped me!

Bearing in mind your observations regarding the deepening of our experience of time by developing our 'being' or personal state through the practical context of Guitar Craft, and the practical element proposed for my thesis, it seems appropriate for me to ask if there is a forthcoming Guitar Craft course for which I could apply? (Surely you are too busy with other things?!)

Thankyou for your time and especially your clarity.

All the best
Rob.

8. 020707 email from RF to RD (with attachment) 'the story of time, and diaries'

rob - let's try this... r.
[attachment: selected Guitar Craft diaries]

9. 020713 email from RD to RF 'Diary digestion'

Dear Robert

I have spent the week reading the diary selection in conjunction with a trip to the British library to read Anthony Blake, and efforts to comprehend enneagrams in Bennett's 'The Dramatic Universe' Vol III. Also a revisiting of 'God Save the Queen/Under Heavy Manners'. It's been great! - thankyou.

Reading the diary selection revealed material with which I have a degree of familiarity (GC aphorisms and certain approaches to music and life) and served to clearly illustrate the level of personal commitment and exposure made by yourself (and others) in the service of music.

At the end of this week's study, I feel it is a matter of courtesy to acknowledge a completion (An end may be a finish, a conclusion or a completion) of the aim of my initial request to you - to provide me with research material(Define the aim simply, clearly, briefly, positively). This you have done most generously (Honour sufficiency). The various observations made regarding temporal perception in the diary selection will be of great value.

I am interested in pursuing aspects of the research material you have provided (for example, what impact systematics has had on your pedagogical approach): I would also be interested to know more about plans for 2006. However, to pester you on these points would (I think) constitute a demand on your time beyond the aim of my initial request.

All the best,

Rob.

<<http://www.loopers-delight.com/tools/frippertronics/frippertronics.html>>

Frippertronics

Andre LaFosse contributes this fine article on Frippertronics, the system used by Robert Fripp in his pioneering forays into looping. Enjoy...

Frippertronics/Soundscaping

The process known as Frippertronics originated when Brian Eno demonstrated a tape-loop system (wherein a single reel of tape is actually physically joined together at the ends and then run continuously between the outermost reels of two adjacent decks, the first of which records incoming sound and the second of which plays it back) based around two reel-to-reel Revox decks to Robert Fripp. (According to the liner notes for Fripp's 1994 solo album *1999*, a mechanical diagram of this process graces the cover of Brian Eno's *Discreet Music*.)

In a 1979 interview conducted by Ron Gaskin (which is, incidentally, one of the most illuminating and amusing Fripp interviews I've run across, and which is available on the Elephant Talk Web archive), Fripp describes the mechanics as follows:

RG: Could you simply explain the process of Frippertronics?

RF: Yes. I record on the left machine, the guitar is recorded on the left

machine, the signal passes along the tape to the right machine where it's played back to the left machine and recorded a second time.

RG: OK.

RF: The signal recorded the second time passes along the tape to the right machine where it's played back a second time and recorded a third.

RG: And at what point is it released into the room?

RF: Oh, straightaway. Unless, what I could do if I wanted to be crafty, would be to build up a chord which no one could hear and then turn the chord on, but, in fact, that doesn't happen. I've only done that, I think, on a couple of occasions. You hear it happening.

The track "The Heavenly Music Corporation" from the Fripp/Eno album *No Pussyfooting* is, in fact, a document of the very first time Fripp was exposed to looping. Though the album was released in 1973, word has it that the actual recording took place in 1971 and was delayed for two years by Eno's record company, on the grounds that association with Fripp could be detrimental to the former's career. Fripp allegedly coined the term for his own use of the system chiefly because, as he put it in Eric Tamm's book, "it was a silly name."

(It should be noted that, to my knowledge, Eno was not in fact the first person to develop this type of tape loop system; though I am unsure as to exactly who can lay claim to the origination of the process, I am under the impression that Terry Riley and Steve Reich both did work with tape loops which preceeded the advent of Eno's work, albiet of a somewhat different mechanical and sonic nature).

The first recorded evidence of Frippertronics of which I am aware is the album *Exposure*, which was the first release by Fripp following the end of his mid-'70s retreat from the music scene (and holds the additional distinction of being one of the most thoroughly bizarre recordings I've ever run across). The Frippertronics effect is scattered throughout the record, and is probably most readily identifiable in the piece "Water Music 1" which serves as a prelude to "Here Comes The Flood."

The "Exposure Non-Tour" which followed the release of the record consisted of a series of solo Frippertronics performances held in a variety of atypical venues, including pizza parlors and barber shops (the latter of which apparently served as the impetus for so-called "Barbertronics," wherein Frippertronics provided the soundtrack for hair-cutting).

Fripp's comments in the 1979 Gaskin interview go on to describe the unorthodox nature of the music, and the atypical expectations it placed on the audience; from a modern perspective, these are highly interesting and valuable insights, as they provide firsthand evidence of some of the first public performances of "ambient" music.

A document of solo Frippertronics performances was released in the '80s under the title *Let The Power Fall*. One detail of this recording of note is that the recordings on this album are not of the entire performances, but only of the portions of the music which were printed to the tape loop itself. Apparently Fripp would commonly solo over the loop in the background; this aspect of the performance, not being put into the loop, was subsequently not present on the final record.

Frippertronics was employed throughout Fripp's public work in the early '80s, after which he left the performance scene and formed the Guitar Craft network of clinics. Upon his return to the music industry in the

early '90s, his use of looping became considerably more complex in both mechanics and result; a pair of T.C. Electronics digital delays replaced the Revox tape decks, and the use of MIDI guitar was far more prominent than it had been in the '80s. (Fripp eventually added other looping gear, including the Oberheim Echoplex Digital Pro, to his setup). Owing to the substantially different nature of the methodology and sound of this process, Fripp dubbed his '90s version of looping as Soundscaping.

Considerably more complex than Frippertronics, Soundscaping has provided the entirety of the music on the albums *1999*, *A Blessing Of Tears*, *Radiophonics*, *Soundbites*, and *The Gates Of Paradise*, all of which are live direct-to-DAT solo performance recordings. It is also present on numerous other Fripp-related projects from the early '90s, including the work of King Crimson and other artists. The earliest versions of Soundscapes can likely be found the 1993 Sylvian/Fripp album *The First Day*, which is scattered with the technique and which features what appears to be a Soundscape solo piece in the form of "Bringing Down The Light."

[This is by no means an all-inclusive overview of Frippertronics, and I encourage anyone else to offer additions or corrections to the information I've presented here. I also encourage all interested readers to investigate the aforementioned 1979 interview in its entirety for more information on Frippertronics theory and philosophy.]

--Andre LaFosse

Robert Fripp's Guitar Craft Aphorisms

Anything created can't be predicted- at least the form any creative impulse will give rise to you can't predict.
Anything you can anticipate will be in terms of what you already know, which is not, by definition, creative.
Something which is creative is new, utterly novel.
If we want to have tea, first we have to put water into the pot, then if we want the water to boil, we must turn on the heat. (GC seminar 1998)
A mistake is always forgivable, rarely excusable and always unacceptable.
The price to be paid for (this) freedom is to honour (the) obligation.
The reward for honouring this obligation is freedom.
A soundcheck bears no relationship to what will happen once the audience enters and musicians walk on stage, other than both soundcheck and performance take place in the same building.
Distrust any musician who gives you their maximum level at soundcheck.
Microphones move from the positions they were put in.
Drum microphones record everything.
Vocal microphones record almost everything.
Excited drummers sometimes hit their microphones with drumsticks.
Feet slip on volume pedals.
Distrust any lighting person that tells you their lights can't, don't and won't cause buzzes on the sound system.
A recording engineer will have to change reels; i.e. tapes will run out while the band is playing. In time, this will occur to them.
Tuning a mellotron doesn't.
Act in accordance with where you are, when you are, with whomsoever you are.
Act with courtesy. Otherwise, be polite.
All creative leaps are the same creative leap.
All musicians are one musician.
An end may be a finish, a conclusion or a completion.
Answers will come through the guitar.
Any fool can play something difficult.
Art is the capacity to re-experience one's innocence.
Art repeats the unrepeatable.
Be very careful about the beginning. Then, be very careful about the end. Then, be very careful about the middle.
Begin with the possible and move gradually towards the impossible.
Better to be present with a bad note than absent from a good note.
Completion is a new beginning.
Craft follows the tradition; discipline maintains the tradition.
Craft is a universal language.

Craft maintains skill; discipline maintains craft.
Define yourself positively.
Discipline is a vehicle for joy.
Distrust anyone who wishes to teach you something.
Distrust enthusiasm.
Don't be helpful.
Don't define yourself negatively.
Equality: we have no equality in talent or experience.
Expectation is a prison.
Fun is a little below seeing and a little above being.
Genius does not require an incompetent technique.
Greed is a poor composer.
Helpful people are a nuisance.
Honor Necessity.
Honor sufficiency.
How we hold our pick is how we organise our life.
If in doubt, consult tradition.
If still in doubt, consult your body.
If we can define our aim, we are halfway to achieving it.
If we don't know where we're going, we'll probably get there.
If where we are going is how we get there, we are already where we're going.
If you have nothing to say, say nothing.
In the creative act, the Creation continues.
In the creative leap, history waits outside.
In tuning a note we are tuning ourselves.
Intentional poverty is fine. Unintentional poverty is wretched.
It is not necessary to be cheerful. It is not necessary to feel cheerful. But look cheerful.
It is possible by work alone to become an artist.
Let us find clean and cheerful friends.
Life is too short to take on the unnecessary.
Love: the act of loving is love itself.
Money is never a problem, only a difficulty.
Music is a benevolent presence constantly and readily available to all.
Music is a mirror of who we are.
Music is a quality, organised in sound.
Music is the architecture of silence.
Music is the cup which holds the wine of silence; sound is that cup, but empty; noise is that cup, but broken.
Music so wishes to be heard that it calls on some to give it voice and some to give it ears.
Necessity is a measure of aim.
Never react.
Nothing is compulsory, but some things are necessary.
Nothing worthwhile is achieved suddenly.

Offer no violence.
One note is all notes.
Performance is inherently unlikely.
Playing fast is easier than playing slow.
Practice is a way of transforming the quality of our functioning.
Purely by hard work one can become an artist.
Quiet is the absence of sound, silence the presence of silence.
Relaxation is necessary tension. Tension is unnecessary tension.
Relaxation is never accidental.
Rightness has its own necessity.
Silence is an invisible glue.
Suffer cheerfully.
Suffering of quality is not apparent to others.
The act of music is the music.
The beginning is invisible.
The end is a finish or a completion.
The highest quality of attention we may give is love.
The mind leads the hands.
The musician is a performer the moment they walk on stage.
The necessary is possible; the optional is expensive; the unnecessary is unlikely.
The performer can hide nothing, even the attempt to hide.
The problem with knowing what we want is we just might get it.
The quality of the question determines the quality of the answer.
The question is its answer.
The simplest is the most difficult to discharge superbly.
The work of one supports the work of all.
There are no mistakes, save one: the failure to learn from a mistake.
There is only one musician in the world, in many bodies.
There's more to hearing than meets the ear.
Things are not as bad as they seem. They are worse than that.
To what must we attend? We attend to what we must.
Trust is the recognition, and acceptance, of commitment.
Trust music.
Turn a seeming disadvantage to your advantage.
We begin where we are and move gradually towards where we are.
We begin where we are.
We have three rights: the right to work, the right to pay to work,
and the right to suffer the consequences of our work.
We know others to the extent we know ourselves.
We may be equal in aspiration; we can be equal in commitment.
We only have what we give away.
We pay our own tab.
We perceive our perceptions.
Welcome the unexpected, but not the arbitrary.
We'll never get rich by hard work. But we'll never get rich without it.

What is the name of your group?
What we hear is the quality of our listening.
What we hear is the way that we hear.
When we have nothing to say, it is very hard to say nothing.
When we have nothing to do, it is very hard to do nothing.
When you're tired, and can't do anything, don't do anything.
And while you're not doing anything, practice.
Where we're going is how we get there.
With commitment, all the rules change.
With craft the musician can copy something old. With
discipline the musician can copy something new.
Expect nothing.

Guitar Craft Diaries**Guitar Craft – Alfelt, Germany**

Level One**Monday 3rd. August, 1998;****09.28**

Alfelt.

Over breakfast this morning, before the inaugural meeting and the formal beginning of the course, silence came to visit. Surprisingly. And hovered for some 15 minutes.

Accessing my GC files I read this:

"Saturday 7th. February, 1998; 10.00.

All Saints' Centre, Raft Island, near Gap Harbour;

Over a modest but sufficient breakfast between Frank & Ingrid Sheldon, Paul Richards, Stephen Rhodes, Curt Golden and myself, silence came to visit; quite suddenly and unmistakably, at 08.36."

E-mails of good wishes on the board from the Seattle Guitar Circle and the GC Registrar in Chile.

Tuesday 4th. August, 2001;**14.14**

Last night I had a strange and disturbing dream which I did not recognise as mine or coming from me. I checked with Hernan and discovered that there are strange and violent dreams which several of the Crafties have been having. Hernan and I have shared dreams in other course buildings, and the convention seems to be continuing.

The various houses and facilities which appear and become available to GC courses are, obviously, supporting our work. But often I feel that a primary purpose of a course in a particular building is to contribute something to that house. Often, the history of the house is itself strange or disturbed. My sense, although difficult to declare and type onto the web-site of a record company, is that a primary action of many courses is partly to redeem a house from its history.

This course is beginning to simmer. We have one good loony who is beginning to irritate the kitchen and staff. He has himself appeared in several of the more experienced Crafties' dreams. "A good loony is hard to find": this might be a worthwhile adage for any endeavour which

otherwise might tend towards comfort or smooth running. A bad loony is destructive; a good loony keeps everyone on their toes by being a natural irritant, and by asking dumb questions - like addressing fundamental issues and principles which anyone in their right mind has already filed under "given".

Fortunately for Guitar Craft Courses our adage might be: "Not only is a good loony easy to find, but they come looking for us." Hernan tells me that our loony has been telling students what Mr. Gurdjieff and Mr. Bennett meant by "awareness". Now, that's helpful.

The greatest difficulty for me on any course is the morning when the right hands come to me: grasping, squeezing, dropping picks.

"How we hold our pick is how we live our lives" is a well-established Guitar Craft aphorism. How we hold our pick is a very small thing; but how we do one small thing is how we do all the small things which, taken together, is how we live our life. When I attempt to modify, gently, how a student holds their pick I am confronted by the total energy of their belief system, personal agenda, prejudice and attitudes, recorded and established in musculature and tissue; that is, how they live their life. My experience is like walking into a brick wall, and inviting it to change its nature.

For several years I have been asking myself whether I can continue to put myself in front, regularly and periodically, of this fixity, multiplied by (on this course) 24. I have no answer to this question. Even the Introductory Weekends have failed to significantly diminish or moderate the attitudes which these hands present to me.

Associational Rattling:

A recent guitar magazine poll of the 100 Best Guitar Solos included the solo to "Schizoid Man". This is a silly assessment: it is an acknowledgement of the piece. The solo itself is worthwhile in context but, as a solo, not exceptional. The solos to "Sailor's Tale" or "Fashion" are exceptional solos; even "Baby's On Fire" and (for me) "The Night Watch". But "Tale" and "Fashion" can hold their own with any.

The next question would be: on what criteria? Mine would be sheer energy of delivery and execution (read "feel" or, a far better term, passion), original conception and vocabulary, and finally, technically innovative. More simply: feel, ideas, technique. In that order.

The next question would be: well, haven't you played a good solo for years? An answer to that would be that, for the past many years, I have been more interested in contributing to the ensemble. Another answer would be that, in King Crimson, I don't have a supportive context for soloing. And so, I look to how I may contribute to the group. A further answer is that, in both Projekts One & Two, there has been some fierce sprays of burning Fripp (and Gunn).

20.27 The course is beginning to simmer. Irritation is rising in several of the team.

Silence visited during dinner in a major way.

Thursday 6th. August, 1998;**15.12**

The Level One students are preparing for a performance this evening, a challenge set them Wednesday evening. Names were pulled from a hat worn by David Bowie on his "Serious Moonlight" tour of Germany in 1982, and the property of registrar Hernan Nunez (who worked for the promoter). The names were placed in groups of various sizes. Each group then composes and rehearses its music, preparing for this evening.

My morning, and some of yesterday afternoon, has been spent in meetings with the Kitchen Team. These are usually more experienced Crafties who have sufficient experience to work in the kitchen and accept responsibilities for the house, such as cleaning the bathrooms. This is something like an ongoing Team, and is a course within a course. Both courses support substantially each other, although the ways in which this is so are not all obvious.

And I have had some time to approach my own compositional process, notably for the next generation of King Crimson repertoire. It is exceptionally difficult for me to set an agenda, for myself or a course, within a GC course and I have learnt not to try. In the first year of GC courses I had clear aims for what I hoped that course might address. Within 10 minutes of the opening notes it became clear that the course was going to go in another direction. So, I follow. My responsibility lies to the course and students, and my own interests only come to life if they interface and support the course. Fortunately, with current musical materials this is partly so.

The Europa String Choir, all four of them, are attending this course and performed this lunchtime; a lift at mealtime. Bert Lams, of The California Guitar Trio, arrives this afternoon.

Friday 7th. August, 1998;**15.09**

The students' performance yesterday evening was a rich event. From one point of view, hilarious; from another, tragic; from another, powerful; from another, demonstrative of a thorough-going ineptitude; from another, courageous. All of these and more.

A performance is always - something more than a performance. A high-information situation, as one might say. Whatever appears to be going on, there are other things happening. And below all of this is the unfolding of an archetypical process, which carries its own power and dynamic.

Fairly naturally, questions of stage fright arise. My own experience of performing in public now covers over 38 years, and I would divide stage fright into the categories "real and imaginary fears". The approaches to each share one thing in common: physical relaxation. This is an aspect of a fundamental GC exercise, The Assumption Of Virtue, which is subtle but exceptionally powerful.

I note again this morning that my advice, even when sought, is rarely welcomed. If I include unsolicited appeals (that is, outside a Guitar Craft context) I reflect that the less paid for my advice, the more it is rejected; this often in ill-mannered and offensive terms.

Before the creation of Discipline Global Mobile I received a large number of demo tapes. This has now hugely increased with the formation of an artist-friendly, music driven company. A standard request is much like this:

"Please listen to my demo (20-60 minutes) and let me know what you think of it; and give me advice on how to have a career in the music industry".

The first request, if treated seriously, takes 1 - 2 hours of my time; to include the second, 2-3 hours. I note that I have spent many hours on these questions, personally and in correspondence. In recent years this has been primarily for Guitar Craft students, who have invested considerable time, money and effort in seeking this advice.

I also note that when I consult my solicitor/s, barrister, accountant, professional adviser for their advice they generally send me a bill for between £125 - 175 per hour of their time, plus expenses.

Nevertheless, I have considerable sympathy for musicians facing the rigours of presenting themselves and their music to the world. So, I take this topic seriously and address the serious student (through GC). Unsolicited recordings through DGM is something I shall address in the future. But the quick answer is: DGM is not soliciting for artists, and in any case cannot help those not yet established or recognised in their field.

Better not to ask for advice until I am prepared to hear, accept and respond. This takes a more subtle currency.

21.07 In my meetings with the students this afternoon, a common feature has been the effect of the performance upon them. One of them made the comment that the performance magnified their experiencing. Performance (properly conducted and not undermined by puncturing operations) amplifies and intensifies the energies within the performance. Which can be transformative and life-changing. This is why I have such respect for live performance.

The external part of the performance, like the "sound" of the music, can be quite naff (a local promoter left early because the playing was "bad") without compromising the fact that performance is performance. The act of music IS the music.

An important feature of Guitar Craft playing in the circle is "circulation": the passing of a note from guitarist to guitarist. Actually, what is being passed is not the note, but what is being carried by the note: the presence, understanding and state of the player. It is astonishing to feel anger, fear, or courtesy, or understanding, being passed along the row of seats to where one is sitting.

A frequent question today is: "How can I contribute to the group?". This generally in terms of - the group is arguing about what to play, is bad tempered, tired, frustrated: what can I do? My view is simple: all that we can contribute is the quality of our own work. When working with a number of other people, it is easy to see and feel negativity passing out of one person into the group; like a bad smell feeding into the atmosphere. Equally, a relaxed and present person might neutralise and equilibrate a tense situation.

So, what can I do in a group when things get tough? Relax, sense my physical presence, and ooze goodwill! And sometimes the universal language of a smile helps too.

Saturday 8th. August, 1998;

10.54

The Kitchen Team and I have had our final meeting. Most of them are staying on for several weeks as part of the extended Summer course, with public performances included. The Gauchos Alemanes will continue touring at the end of that.

Among the performers in the Kitchen Team / Staff, the Europa String Choir have radically revibrated themselves, repositioning themselves on stage (even if it's the floor at the end of the dining room) and embraced more fully the implications of technology and electricity.

The students are choosing the focus for their day's work, to be presented at the end of the afternoon. There are more English (4) among this course any I can remember, outside a course at the Red Lion House in Cranborne. My work in any of its forms has little resonance, and I have no voice, for England and the English.

16.23 The Level One has been working with an exercise which requires the attention to be divided. I experience:

1. How precious the attention is;
2. How little our attention appears to obey our direction;
3. How much our attention is sucked into what attracts us.

Moments like this, when I confront the poverty of what I am, terrify me. That's because, moments like this are terrifying.

20.15 The final meeting is in 30 minutes. My sense of the course is:

1. It has been limited / flavoured by the expectation of many students returning a second time, in some cases after several years. In GC terms, this gave the course something of a Level Two flavour. In GC-speak "a Level Two will suck the life out of anything that moves".
2. A high amount of negativity, often visible in tight forearms and mouths opening and closing, locked in sync with the playing.
3. A house which has an interesting and not entirely positive history.
4. The poverty of my own nature. Guitar Craft courses are awful for me.

21.53 At 21.51 and 40 seconds on this Saturday evening, the Eighth of August 1998 this Level One completed.

Guitar Craft - Gandara, Argentina

Level One

Wednesday 29th. March, 2000;

18.00

Seminario San Jose, Gandara, Buenos Aires Province, Argentina.

Already music is here. The concerns of professional touring, such as playing in unsuitable or inappropriate venues with high ticket prices in Europe, release dates, distribution of monies & publishing shares, have no place here. Rising after a siesta, and a call to The Horse in Telford, I sat with a cup of coffee (which once had probably been hot) on a chair outside the dining room looking through to the courtyard which is at the centre of this Catholic seminary. The Kitchen Team came in on Monday to prepare the facility for the influx of students on Friday to Guitar Craft (Argentina) V. They are performing this evening and have been preparing & practicing this afternoon. The sounds of acoustic Ovation guitars bounce around the walls, rooms & corridors of the building. Music is here. The music business is not. How to express the joy in this? Clean. Direct. Available. Present.

Probably members of the public have little, can have little, experience of the presence of music when the act of music has been mediated by commerce. How else is performance organized? Well, probably on a small scale for & by amateurs. The music industry presents entertainment & extravaganzas very well, but not events where music is the central focus. And if the industry were able to organize a musical event, then photography + autography + taping would kill off any possibility that was left. Perhaps I should accept, there is not a sufficient genuine commitment to the musical event in our (Western) culture for what I wish to achieve. If I did accept that, I would get on and organize my life according to different ground rules.

After the cup of coffee, looking at the grapes hanging from vines in the courtyard, guitar chords continuing to bounce off the walls, I went into the church attached to the seminary. It is also the parish church for the village of Gandara. For some musicians, music is God. This is not my position. Stand face to face with music, and see what is behind it. Then this becomes a practical matter. How to stand face to face with music?

We begin where we are. So where are we? Almost never in the moment. In Guitar Craft we begin our first morning by doing nothing. The injunction is: do nothing, as much as you can. Perhaps we are fortunate and, suddenly, might find ourselves where we are. In that moment we are present, even perhaps available. We look out the window and see the garden. The sun is shining. What a difference this is, to the artificial light in the basement! Then we're back: we've fallen into the basement. Home again. But if we were touched by the sun, our life in the basement can never be acceptable or comfortable again. We *have* to find a way to build a ladder out of our this prison, formerly known as home.

So, once again, here we are with a Guitar Craft Level One. Always the same. Always different. Always the first time. We have had 4 courses in the Seminario San Jose. The last one was in November 1996.

Professional developments: on Monday, back from Tokyo, I spoke to Richard Chadwick regarding the venue for Crimson in Prague. The first time Crimson played there (1996) we got shafted by the venue: the Hall of Culture, capacity 2800. This is too big for Crimson to develop intensity, too big for the details which are a necessary part of KC repertoire, too big to connect with the audience, the audience too far from the musicians to sense their humanity. So the public got shafted too. Another dismal show from a tour of mostly dismal & inappropriate venues, and mostly dismal shows. Perhaps the performances from that tour were kinda OK, kinda professionally adequate, not bad. If so, then Crimson failed. When Crimson plays a kinda OK show, it means the show was feeble. OK is not good enough to merit all the difficulties and grief involved in Crimson going on the road.

Do the other guys hold the same views? Probably not, and for various reasons. A good professional knows that most (at least) European venues suck. So why get distressed? A good professional knows that ticket prices are high. So why bother? You get onstage and play the best you can. People cheer. You get paid. You go home. You can't change the system, but you can play well. Anything more than that is unrealistic. Which is why my life as a touring musician is close to hell. I find it very hard to accept conditions which nominally support the performance of music but which act to undermine it. Regrettably, with the active support of many in the audience. I walk onstage to engage with the audience, not protect myself from those who claim their "rights" to act as they want, regardless. When audience & players are not even on the same side, life is hard.

Back to Prague. This time round I asked for a smaller venue. The audiences in Prague (and Warsaw) got a bad deal last time round, so for this tour I've done what I can to get better venues. In Prague we have a 1200 seat capacity. Ticket sales were strong: 65% went very quickly. So, the promoter offered another venue, with 2500 capacity. How could anyone say no? More money, more people, everyone happy? This is a typical example of how potentially good things go off course. I said not for me.

One of the main lessons I've learnt as a professional is this: you do shitty things for as long as you do shitty things. Then, one day you say no and you do one less shitty thing. No one – management, agency, record company, road managers, tour managers – will change the way the industry works for you. However much any of these people aim to protect your interests, for as long as you do shitty things, you will continue to do shitty things. So, when one day you're offered something which is not right, you say no. That's when it changes, and not before. Otherwise, you will continue to have a shitty professional life.

19.40 Hernan Nunez met me at the airport with his driver Claudio, aka The Terminator. Claudio was a marine on the Belgrano when it was sunk by a submarine of the Royal Navy. He was one of the few who survived & is an official Argentinian hero. Claudio is a small, gentle & tough man who is unstoppable when in committed & directed action. Hence his appellation.

Argentina is a wonderful place; mad, passionate, corrupt (by Western standards), humanistic, flexible, alive. I love it here. Buenos Aires is a music city par excellence. But if you

have little money, life is cripplingly hard. There is a huge gulf between the wealthy & the others. The middle class has been squeezed during the past 4 years. The knock-on effect of Mexico's currency crash on Argentina was considerable. Life is a negotiation with necessity. But here there are riches which don't have one peso + one dollar tagged to them, like, children are a welcome part of the family, and each a gift from God. This is distinct from the English position, where children are a punishment for unprotected sex.

Networks of family & friends are essential, necessary. When a Crafty in Buenos Aires died of cancer recently at the age of 46, leaving his octogenarian parents behind without support, other Crafties went to see him before he died and told him that they would provide for his parents. So, he could fly away unburdened. This gives a flavour of the Guitar Craft community, and only hints at the power present within our network. My life as a professional musician to 1984 – characterized by antagonism, hostility, avarice, self-seeking, politicisms, self-regard, arrogance, dishonesty, exploitation, delusion & self-deception, drug & alcohol abuse, manipulation, and occasionally music of an extraordinary & sustaining power – was a necessary preparation for Guitar Craft. Exactly how & why I continue to learn today. But in Guitar Craft a sacred space & time opens, within which the proper concerns of the aspirant musician, and human being, may be addressed. How this may be is beyond me. That this is true, I can have no doubt.

Music is a field of benevolent, living intelligence that wishes for us more than we can bear to know. But there is no force in this, rather a radically neutral availability on permanent offer. Music is as available to us as we wish it to be, a gentle necessity. If we wish for this, we have to make ourselves available to music. To make ourselves available, we begin where we are. We begin in this moment, doing nothing. From there, we move to doing something.

20.34 A tasty dinner of calzone, prepared by the Kitchen Team under Mr. Ugo. Mr. Ugo is a film maker, and I know him better by his Guitar Craft name: Mr. He-Has-More-Hair-On-His-Face-Than-He-Has-On-His-Head.

One of the 92 e-mails awaiting me on Monday/Tuesday came from my essence brother Peter. Peter & I have been connected since group meetings at Randolph Road, the Bennett house in London, in 1974. We went to the fifth year at Sherborne together and were both Morris men in the Sherborne village troupe. Afterwards, we undertook a farming experiment in Cornwall, near Godolphin House, in 1978. Jack Willis, my godson, was christened in the village church. Peter & I went to visit the Stavravouny Monastery in Cyprus in 1979. Since then Peter & I have been involved in various adventures. Peter is the artist of "The Angel Of The Presence" which is the opening page on the DGM website, and the cover to "Three Of A Perfect Pair" is based on a larger painting of Peter's.

Peter was ordained last Sunday in London as a Deacon in the Russian Orthodox Church. This is the culmination, & a beginning, of a journey which began for Peter in 1973. Sadly, I didn't learn of this until Tuesday, but I had felt that something was in the air. This is a joy.

Also part of that expanded moment, connecting with JGB & Sherborne: on Tuesday I called Ben Bennett at Bennett & Luck in Islington. Ben was my first movements' teacher in 1974, and introduced me to a series of exercises which were part of the Sherborne corpus. Ben

& I discussed the present status of the JGB tapes, for which I have an ongoing responsibility dating back to Sherborne V (1975/76). There are 53 published audio talks which James Tomarelli of Bennett Books in Santa Fe is looking to make available once more. My present concern is to transfer all the archive tapes & cassettes into the digital domain, ready for the next generation. The existing JGB cassettes are now 15-25 years old, and it's time to make this remarkable resource available again; primarily for study groups, but also for the public where appropriate.

JGB remains a Black Sheep for many in the Gurdjieff Society & orthodox Gurdjieffians. I have been told that some Society members secretly listen to the published JGB tapes. Wow. Wild things. There are only 6 people left alive who worked with Mr. Gurdjieff (I was informed 19 days ago by one of them).

21.30 The Kitchen Team have made a short performance in the auditorium. I helped prepare the space by rearranging furniture & adjusting the lights.

Thursday 30th. March, 2000;

16.53

The Seattle team flying here have got stuck in Chicago for a day. They now arrive tomorrow.

If we remember from the Alfeldt course the comment that A Good Loony Is Hard To Find – But Not For Us, our Good Loony has already arrived in Argentina. He follows a pesterance of e-mails to the Registrar expressing his interest but has not yet paid for the course.

Meanwhile, I have collected a pocketful of fresh walnuts from outside the seminary. Fernando Kabusacki & Martin Schwutke have been eating them over afternoon tea. I had one: very fresh & tasty.

The 30 foot radio mast on top of this building has enabled us to be communicado. On earlier courses it has been almost impossible for me to stay in touch with Toyah. Today, she called at 14.45 and we spoke. I believe this is a first. Hooray!

The Kitchen Team continue to prepare the space, practise & get in shape. We had a meeting this morning to address practical matters. In the kitchen on the first course in this facility, kerosene dripped regularly by the stove and was used to disinfect the floor. Tom Redmond remembers this course very well. Apart from a reasonable fear that he would disappear in a conflagration while on kitchen duty, in the Hellton dormitory (a large room shared only by Tom and Bill Forth) The Beast visited Bill in the night. The Beast was non-corporeal and gave Bill rather a shock. Tom had set up a field of protection around his bed before retiring and slept rather well.

So I have been told, when sites of devotion & prayer are left dormant denizens looking for a home tend to move in. But what do I know of this? Only that there have been wild & unsettling dreams on Guitar Craft courses over the years, and I have dreamt some of them. It is almost commonplace by now that some dreams are shared by a number of people. But that is another story.

Thursday 30th. March, 2000;

18.24

Well, that was an adventure: online at 9K. I managed to send out several e-letters & the Diary, noticed there were 72 e-mails waiting for me but was unable to retrieve them: transmission was so slow the Compuserve programme seized & I had to re-boot.

20.13 Silence came to visit during dinner. It arrived around 19.10 and stayed until 20.00. The visit of silence is a high spot in Guitar Craft courses. For some students, it is unbearable. Sometimes they leave the room. On one course in Japan, the course loony shouted "Stop it!". Normally, we are able to bear silence for around 30 minutes. This is a Kitchen Team, Crafties with some experience and a developing practice. So, we were able to bear 50 minutes.

Quiet is the absence of sound. Silence is the presence of silence: rich, vibrant, potent, available.

I have read the view that silence is an approach of the Spirit. What am I to make of that? But I am of the view that applied, intentional work attracts the attention of benevolent intelligence; as if light is concentrated & functions as a beacon. The musical analogy might be that musical work of a certain quality and intensity attracts the attention of the Muse. It's a great idea, but the experience is something else.

At the end of a tour by The League of Crafty Guitarists, the famous Bogo Tour & their first tour without me, they put on a performance in the Claymont Octagon (1989). About one third of the way into the show, a powerful presence arrived. Someone came by to visit what was going on, sat above the stage and filled the Octagon's space. I asked one of the League how the show was for them.

A. Something happened.

Q. When?

A. About a third of the way into the show. I couldn't look up.

That was also my experience.

Fifteen years ago today the first Guitar Craft Course was in its fifth full day. Several of the Level One team have been working with Curt Golden, who was on that first course.

It is probably not able to convey, certainly not to basement logicians, cynics & those knowing of my fallen nature, the power of the current which enables Guitar Craft to come to life. As with Crimson, this has nothing to do with Robert. It's something like the Crimson "Good Fairy". If anyone has ever felt music come to life in Crimson, been touched by the sheer otherness of it, the experience is something like that. Intimate but utterly impersonal. The "Good Fairy" is not a person, but an enabling current which allows Crimson to be Crimson. I have been in its presence, unmistakably. In that sense the Good Fairy it is tangible, recognizable, experiential. Guitar Craft's benevolent presence is similar but the experience is richer, more available & direct.

I respect Fripp for having the good sense not to mistake himself as the force which makes Crimson Crimson. It's also to his credit that he doesn't mistake Guitar Craft as coming from him. There is, in Guitar Craft, something at work which goes far beyond the people involved. Guitar Craft could not happen if it were dependent upon the people involved.

The role Fripp plays, as instructor, requires a level of "being" (for want of a better word) which is not naturally available to me. I don't have enough "money in the bank". But if a course requires more currency than I have available, then for the course to function properly there has to be a "loan", if not a gift. Loans have to be repaid, if not in life then on leaving it, and a gift cannot be held: it remains in motion. On occasion, I am aware that funds are being transferred to my account.

After 26 years of sitting on the floor, and the privilege of working with people skilled in subtle energetics, one recognizes certain visceral characteristics when "the flow of funds" is taking place. At the beginning of the first course in Japan, I was in bad shape. This was during the early period of the EG collapse, dispute & litigation: terror, suffering, horror, misery & living death. Clearly, Fripp was not in a good place to discharge his role. And then, sitting at a dining table, it began: a transfer of funds, beginning in the soles of my feet and moving upwards to the top of my head.

There was a different quality to this transfer than courses held in the West. My subjective interpretation of this: a call had been made to the local representative, who sent someone round to deliver the cash. The unknowable action of grace? The transmission of baraka? These are words, and what do they mean? Guitar Craft is a gift and a blessing.

23.09 A full team meeting to consider the questions: "What do you do when you are in despair?" and "What do you notice when you have noticed something?". The answer to both is superbly practical. The question - "What is the primary function of a Guitar Craft Level One?" - has the same answer.

Friday 31st. March, 2000;

10.02

The Kitchen Team are preparing to feed 75 people this evening. There will also be visitors this weekend, including wives of Crafties in the Kitchen Team.

12.09 The Aims Of The Diaries

Public Aims:

1. To engage the listening community at an earlier stage of the creative process than is commonly available.
2. To inform the listening community of the practicalities of that process.
3. To de-mystify the process which is, essentially, practical.

Private Aims:

1. To encourage the Diarist to recapitulate their experience.
2. To provide the Diarist with a pointed stick.
3. To expose the Diarist to public ridicule.

Comments:

1. We continue to have a Romantic notion of the artist: a special creature set apart from common humanity, one favoured by the Muse.

These Diaries indicate the mundane nature of the lives of artists: their simple, human and practical concerns. These Diaries remove the mystification which we project onto the artists, their lives and activities. The creative process is shown as being straightforward, ordinary and practical.

At this point, with the commonplace nature of the artists' work revealed, the creative process may appear more remarkable than before: how can ordinary people like these give rise to work which moves and touches us?

Then, we find a new and deeper respect for the benevolence of the creative impulse: it succeeds despite these people, not because of them.

2. Much commentary on the lives and work of artists is projection: unfounded, uninformed, without data, without direct experience, based on what we believe the lives of artists to be. Most commentary by "fans" is based on ignorance, rooted in personal prejudice, like and dislike. This is commentary from the basement.

The enthusiast is better informed, able to engage with the process in the moment, and suspend the immediate rush to judgement. This is the view from the garden floor.

The connoisseur understands: they know, feel and sense the currents at work in the creative process. They have themselves undergone a training, but in listening and "appreciation" rather than in performance. This is the view from the floor above the garden room.

3. The recapitulation of experience, in the form of diarism, is a way to digest the impressions which life, and our living of it, naturally provides. The Diarist reviews their actions, feeling and thinking, and presents us with an overview of their life process.

Maintaining a diary is itself a process, of engagement with oneself. An ongoing diary presents a challenge which invites the Diarists to move beyond their natural lassitude, to go further than the merely comfortable.

Maintaining a public diary is also a process, and engagement with the listening community is the stage where diarism comes to life: the arrogance, foibles, pretensions, weaknesses and aspirations of Diarists are revealed to public gaze and scrutiny; even the

attempt to hide is revealed. At this point, heat enters the process, and repercussions generated beyond the purely personal.

13.28 Los Gauchos Alemanes, in quintet formation, performed at lunch. Now, an online adventure is about to begin.

16.02 Getting online was a *significant* undertaking. Marcello Monferrato leapt through hoops backwards, all at 9,600 bps, and eventually we got there. Proof of his success is that you are reading this. But what a pain.

Steve Ball called: BTV progresses.

18.56 Tomorrow is April 1st. & accordingly I've put a spoof schedule on the Board:

04.30	Rise
05.00	Physical exercises outside
06.00	Morning sitting
07.30	Opening meeting (with guitars)
09.00	Coffee
09.15	Group Meetings with guitars
	Group A - Martin
	Group B - Fernando
	Group C - Christian
10.30	Morning Tea
10.45	Physical exercises outside
12.00	Group Meeting
13.00	Lunch

Who could fall for this good humoured April Fools' Day jape? Well, actually anyone Argentinian. Their equivalent is the day of St. Innocent, the Holy Fool, on December 28th. This is when pranks occur down here. Hernan tells me there are concerned Crafties looking at the notice board.

20.27 The Big Time Trio & The Gauchos played at our first meal together. Over this meal I asked the question: "Why will Guitar Craft not become a cult?". Several answers were suggested by the Team. I proposed four:

1. All meals are vegetarian.
2. Sometimes fruit is served as dessert.
3. Scepticism is encouraged: accept nothing that you don't test in your own experience.
4. The Gauchos Alemanes play at mealtimes.

Then dessert was served: chocolate mousse with whipped cream and dulce de leche. Maybe Guitar Craft will become a cult after all; a cult of fat people, suggested Hernan.

22.51 The inaugural meeting will be continued tomorrow morning: not everyone

had time to introduce themselves. I read out the spoof schedule: an Australian Crafty asked if the schedule had anything to do with the date. Latin American visitors had been seen writing down this schedule in notebooks. One suggested it was "discipline". More like cruelty, I replied. So, rising at 07.00 tomorrow.

Saturday 1st. April, 2000;

20.16

Mealtimes provide a useful opportunity for comments on the day. Silence came to visit for 10 minutes or so, then provided a background for more commentary.

21.48 The Kitchen Team met to review their work together. We discussed various details of their exercises; e.g. visualisation, memorising music & developing a sense of physical presence during ongoing kitchen work. Like, when I'm chopping up an eggplant, what else is going on for me? I suggested chopping up the eggplant with two knives, one in 5 & the other in 7. Thrak that vegetable, dude!

The Level One met at 21.00. We circulated and vroomed away at polyrhythms. The Team are tired: attention is mostly spent for today. But a good beginning day.

Sunday 2nd. April, 2000;

08.33

The morning sitting: constant motion, twitching, sneezing. At 09.00 & 09.15 the Level One are meeting with Martin & Fernando for guided practising of the First Primary, and I have the first six of this course's personal meetings with the Kitchen Team.

10.04 None of the six meetings addressed guitar playing. Any dope can change the world, but it takes a hero to make the bed or clean a toilet.

11.36 The Group Meeting with Level One: we addressed passing notes to each around the circle in various combinations: singly, in duos & trios. Also, passing over one unit to the person/s on the other side. The instruction was this: "Play any note you wish, providing only that this is the right note". One student asked: "what is the right note?". So, the instruction changed to: "Play any note you like, providing only that this is the wrong note; that this note violates yourself & anything that you know to be true; is out of tune, out of time & with poor timbre; and is false to anything that you feel to be true of music". But since this instruction was harder than the first, straightaway we went back to "the right note".

The flow of circulating individual notes is smoother today than yesterday. More than this (like acting in pairs) remains problematic, even insuperable in our present condition. So faced with the impossibility of circulating in pairs, we addressed the impossible by making the situation more difficult, and moved to circulating in trios. This is a practical technique when facing an impossible task: don't make the task simpler, make it harder. You may or may not achieve the impossible, but this technique makes success more likely. But after 50 minutes, I sensed a carelessness in the circulating. So I asked:

"If God were looking at our work, & wished to reward us for the quality & intensity of our application by granting us what we most deeply wished for in our lives, by placing this within a note, our only requirement that we must hear it and accept it, would anything change? And if we really *really* believed that grace were available within a note, would anything change?"

Then we moved on to addressing the operation of the right hand, an introduction to the Second Primary. Martin & Fernando are now continuing with this.

The day on any course that I meet with Level Ones, and their right hands, is my darkest day. This isn't just about holding a pick and striking a string: how we hold the pick is how we organise our lives. How we organise one small part of our life is how we organise all the small parts of our life. So, in addressing the small detail of holding the pick, we run into the accumulated habits, attitudes, opinions & manner in which we present ourself to the world.

For example, young men with guitars often have aspirations which go further than the purely musical. Like, acquisition of territory, food & sexual partners. The pictures of guitar stars on the covers of magazines perhaps represent or idealise aspirations in these areas: fashionable clothes, groovy postures & the guitar slung low as a priapic enhancement. Whatever their other possible benefits, pictures of guitar heroes rarely present models of efficient playing habits. So, when I move to adjust the operation of the right hand for picking, I am adjusting (inter alia) the sex life, public presentation & courting procedures of young men. All of this is written into the musculature of the right hand, wrist & arm. If this is what it's like for me, what must it be like for Alexander Teachers?

12.28 Hernan has just had a meeting with a Kitchen Crafty and his young wife in the room next to mine. She suggested, in direct terms, that Guitar Craft is a scheme for making money from gullible students. Robert & Hernan are intelligent enough to fool them all, and then carry the money off to Europe. She is going to send in the tax department. Hernan says that, regrettably, there is no money for Robert & Hernan to carry off to Europe (RF interjection: if there were, don't worry, we'd be off). So, says irate wife, you think you are Good People, then? She is a teacher, and knows what a school is. Do we think Guitar Craft is a school? It is a cult (RF interjection: despite The Gauchos continuing to play at meals). What authority do we have? And she doesn't need anyone telling her to put attention in her hand when chopping vegetables: she has her attention available all the time.

I have no difficulty with informed criticism or commentary, offered with goodwill. Even, on occasions, without it. All of this helps us to refine our work. Our internal learning is ongoing: if it were not, we would be moribund at best.

Several wives are visiting their husbands this weekend, and this is the only hard situation so far. In the past, partners of Crafties sometimes appear to feel threatened by, perhaps jealous of, their spouse's commitment to GC & the time spent in practising. Perhaps, they are simply lonely. I sympathise with this: my own wife has been a Guitar Craft widow more often than I care to remember. For some people, GC is their way. For others, it's on the way to their way. And for some, it's not for them. Perhaps only of passing interest, but not more. For some, this is their family. But scepticism is a necessity. GC is not a belief system: it provides a practical approach to guitar, music & a personal discipline. This is not a place which welcomes the gullible.

The Level One meeting (16.30 – 17.30) approached the right hand, in a musical way. Now, 6 personal meetings with members of the Kitchen Team begin at 18.00. The house has a quiet hour before dinner, to respect the service in the church.

20.04 Several performances at dinnertime. No comments or questions. Several visiting wives are leaving, including the wife of the hard situation. She disappeared for the afternoon & returned to apologise to Hernan. She also made some tasty nibbles for dinner.

22.02 The 20.30 Kitchen Team meeting reviewed the work of the day. One of the team reported clear dreams in which he saw the faces of Crafties who are not on this course. We considered the notion of a community spread through time and place; cf. the GC exercise of Contact At A Distance, but in a more developed and mature form.

The Level One met immediately afterwards and bevoomed for an hour in 11, 7 & 5. There is a tendency in odd meters to snatch at 1. This moves 11/8 to 10.5/8 in a hurry.

On an unrelated note: the toilets here in the rooms assigned to staff are significantly unpleasant. El stinkeroo to the max. Burning joss sticks help to cover the stink arising from the drains below, but now this room is full of smoke. A window is now open to clear the air of pong & incense, but open windows invite mosquitoes to approach and feed upon soft Crafty flesh. One of the chief pleasures of a Guitar Craft course is the sight of Hernan Nunez relentlessly & unforgivingly in pursuit of mosquitoes. Hernan is not a Buddhist, it seems, in his relations with these little suckers. Enter = die. Unapologetically, without hesitation, he squidges them flat with his hand. I'm not sure what Michael Peters would make of this. I wonder, are there any Buddhist pest control officers?

Monday 3rd. April, 2000;

08.40

The sitting was quieter this morning: less movement, less twitching, gurgling, sniffing, coughing.

10.03 Six meetings discharged, the last two with trios. Very few of the personal meetings so far have touched on guitar playing.

11.11 The Level One: Martin & Fernando began introducing the A natural minor / C major pentatonic. In our Group Meeting we continued circulating, this time in these keys, singly & in groups of two and three. Martin & Fernando are now about to introduce lateral fingerings. At the end of the meeting, questions were invited. There was only one.

Q. Are you teaching us something?

A. That is not properly a question. It's a statement: Fripp is a teacher. I'm not a teacher.

Q. Well, are you teaching us something?

A. Are you learning anything?

Q. I'm processing.

Monday 3rd. April, 2000;**17.38**

Fourteen more personal meetings with the Kitchen Team, plus a Group Meeting for Level One. We approached cross-picking for the first time, and began vamping. The Level Ones now have personal meetings with Martin & Fernando. My personal meetings with them begin tomorrow.

I have called Toyah in London to blow her a kiss goodnight, and am suddenly struck by a wave of tiredness.

20.22 Several comments and questions from the Level One at dinnertime. Dinner featured gnocci made by Maria Gabriella Epumer, a famous Argentinian guitarist who is visiting us for several days.

22.06 Meetings with the Kitchen Team & Level One, both without guitars addressing observations & questions arising.

Tuesday 4th. April, 2000;**08.46**

For the first morning since I've been here, the sky is grey & overcast. Hernan has discovered effluvia rising outside our windows which he believes is the source of the horrible smell from the bathrooms. Someone local is on the way to deal with this.

The morning sitting was noticeably quieter & more settled.

11.52 Hooray! Hooray! Now at an end: 14 horrible sets of hands over nearly 3 hours, plus one trio with a good question (on the nature of improvisation).

This is the darkest day for me on any Level One: addressing the right hand. Guitar Craft is the only approach I know which aims to establish a centre of gravity for the right (picking) hand. Instruments of the academy & conservatory have well known playing methods; obviously, the violin & piano as examples. Even the classical guitar. But with the wire-strung plectrum guitar it's as if each player invents their own approach. So, beginners have no orthodox, traditional or conventionally agreed way of learning the instrument.

13.56 Several performances at lunchtime. What a joy this is. Also, comments were invited from the Level One: "Did anyone notice anything this morning?". In response: long stories of associational thinking, generalisations, rationalisations, conclusions, cosmologies of wonderment. But no observation from a point of noticing.

Hernan mentioned, over our lentil brew, that his wife Bettina is following this diary of the course. This is the first time that a course diary has been posted as the course unfolds. I know there will be repercussions from this, and I don't know what they'll be. My sense is that the GC community at large will be accessing the energy of the course, and most likely contributing to it. That is, this diary is facilitating a two-way contact at a distance within the GC community.

17.38 Five more personal meetings with The Level One, all without guitars, at 15.00. Then at 17.00 an introduction to The Practice Of Doing Nothing.

17.53 There has been a digging outside Fernando's window. Fernie came to tell me of this attempt to remove the pongerama by clearing the drains. "He's digging up something that looks like mud", said Fernando. "Right – 'mud'", we agreed. We looked at the local gentleman digging away in this "mud" of particularity and said hello.

LG: "Ah! English".

RF: "But the smell is an international language".

We all agreed on this without difficulty.

18.53 Hooray! The Little Horse has just called from London to say goodnight. Apparently, there's a cold snap fallen on the the UK. This is part of the strange changes in English weather conditions in the past 7 years or so. The winters have warmed up, and as the buds & blossoms emerge in February, 1-2 months early, they get killed off by a sudden cold. Toyah tells me that young lambs are dying in the cold.

20.03 Several performances at dinner time.

"Hard Times" by a sextet Gauchos. Twice as loud & three times as ugly. "Hard Times" was a staple of 1990 League of Crafty Guitarists' tours.

Mr. He-Has-More-Hair-On-His-Face-Than-He-Has-On-His-Head directed an ensemble bearing the name "El Corno Del Fanyulo". Courses at which he appears generally feature an appearance by an ensemble of this name & following his directions. For English readers, the name is translated "A Horn Up Your Ass". If anyone recalls the discussion on naming, in my view this group is well named. Mr. HHMHOFTHHOHH is currently composing & directing on aleatoric principles, he tells me. I believe him. The Horn's performances are well humoured, entertaining & carry intention.

A group including Maria Gabriella Epumer played "Heptaparaparshinokh", from the repertoire of The League of Gentlemen (1980). They performed this at lunchtime, but with a slight & unintentional rewrite which added immensely to its appeal for me. At dinnertime they returned to its original conception, which was also lots of fun.

The Big Time Trio have also been performing at lunch, tea & dinner times; plus various ensembles, some with history together, others ad hoc. At teatime they became The Teatime Trio and played "If I Fell".

We came through The Great Divide yesterday evening: too far from the beginning to go back, too far from the end to go forward. Now, we are close enough to the end to move forward, but with a difference: something has changed in the energy of this course.

21.51 The Kitchen Team met at 20.30 to present comments & observations on

the course, and were joined at 21.00 by the Level One for a full House Meeting. We are now taking a 5 minute fresh air break.

22.56 The House Meeting has just ended. The Level One have been asked presented with the challenge of making a performance for the house tomorrow at 21.00. Small groups arising naturally within the team, and from personal choice, are to be joined by groups formed by the operation of The Hat.

The GC Hat from Grossderschau is presently with Frank Sheldon in Seattle, so a visualised hat took its place. Names of the students written on pieces of paper were pulled from The Hat & placed in combinations. There is 1 soloist, 2 duos, 1 trio, 1 quartet, 1 quintet & 1 sextet. These various formations have until 06.00 in the morning, and all of tomorrow daytime, to compose & prepare for the performance.

Several comments during the large meeting commented on experiencing a change in the course's energy today. Several centred on The Teatime Trio's performance of "If I Fell" which somehow exemplified / marked / brought about a transition. My own sense was that the performance was "real", but what do I understand by that? One observation: the musicians didn't get in the way of the music. No "self-expression". The music was simply there, being played: clean, available, direct.

Fernie reported an addendum to the story of the gentlemen digging in the "mud" of a certain pungency outside Fernie's window. After the comment "the smell is an international language", the specialist in "mud" removal continued talking with Fernando. Digging in the effluvium, he said: "I see you have been eating little cakes". I suggested Fernie should have said: "Yes. Would you like one? Take it with you or leave it here".

As the meeting dispersed, guitarists discovering the new groups chosen by The Hat, Martin & Fernando & I had a conversation regarding longer courses. This feels needed now. But perhaps more on this later.

Wednesday 5th. April, 2000;

08.40

The second Guitar Craft Level One ran consecutively with the first: a break of a couple of days, then straight in again. So, on this day 15 years ago, Tony Geballe was underway in Guitar Craft.

The morning sitting was quieter, with less twitching & gurgling.

My dreams this week have had an unusual clarity & intensity. I'm not sure that this imparts to them any particular significance. I woke at 02.45 to hear the sounds of guitar playing: some of the Level One were obviously going for it.

12.20 The Little Horse is on her way to Edinburgh. My morning has included 3 hours of meetings with the Kitchen Team, some with guitars but mostly without. The Level One performance project is underway, with sounds of thrumming & werning echoing throughout the seminary.

13.41 A lunchtime of performances.

18.08 Thirteen more personal meetings completed. A feature of teatime was "The League Of Gauchos" starring Maria Gabriella. They played one of her songs – "Caracoles" – plus "Heptaparaparshinokh" and a surfing tune featured in "Pulp Fiction". Steaming.

The Great Divide was mentioned during the House Meeting last night. On a short course, the duration of the Divide is correspondingly shorter. On a 3 month course, this is correspondingly longer and harder. On November 1st. 1989 I wrote the following letter from England to the members of the Level Three at Claymont. It was read aloud on that course by Debra Gavalas Kahan, and I pinned it to the notice board here 10 minutes ago.

"Dear Team,

Here is a question: what do you do when you have no enthusiasm, no interest, and no energy? The answer is simple. You cook lunch. And then you wash it up, clean the bathrooms, run the office, practice guitar, practice silence, and cook dinner.

Here is another question: what do you do when you can't do anything? The answer is simple. You do what has to be done. Like cook lunch, wash it up, clean the bathrooms, run the office, practice guitar, practice silence, and cook dinner.

The principle is this: suffer cheerfully. You are now being asked to deliver on your commitment to the course. Any fool can change the world, but it takes a real hero to cook lunch without demur, without complaint, and with a smile. This point of reliability is the basis of the spiritual life.

The one greatest single thing that I have learnt from Guitar Craft, this remarkable and unfolding action of which we are all privileged to be a part, is the inexpressible benevolence of the creative impulse. The Creation is creating itself all the time. This is not a finite event. It is ongoing. And we are part of this ongoing creation if we wish to be, and if we wish to place ourselves at the service of the creative impulse. Guitar Craft is only one example of the remarkable emergence of a major action of healing within our troubled world. The creative impulse, which invents Guitar Craft as it goes, is itself a vehicle for a far greater power, the power which maintains the Creation. In a word, love. The healing power, the power of making whole, of making holy that which is already holy but fragmented, acts through agents. Love does not exist, because it is not a power which can be constrained by existence. But, as we all know, love is quite real. To be present in the world it must be borne and carried by loving agents. The creative power is also a power which is beyond existence. To be present in the world it must be expressed through play, this creative action which is quite necessary. Play is spontaneous, in the moment and seeks no outcome, no result. The play of craftsmen and artists is in the moment, but moves from intention and seeks to generate repercussions.

I suggest that all of us have some sense of this, whatever words we may use to express it.

If we wish to participate within the loving, creative unfolding of our world, we place ourselves at the service of this unfolding. Because this is so much at variance with what we would call "a normal way of living", most of us need instruction, techniques, exercises and help. If we are clear that this is really what we wish, we test this wish.

The particular challenge of a Level Three course is crossing The Great Divide. The Great Divide is with us in many small processes throughout our day, but generally we can escape from it, for several reasons. But over a period of three months it hits hard. The Great Divide is a necessary and inevitable part of any and every process. It is where we are too far from the beginning to go back, and too far from the end to go forward. It is the point where processes break down and go off course.

If we wish to be vehicles for the creative impulse, it is no good falling apart en route. The passenger gets thrown out. Our friend love gets dumped in the mud, and our pal healing action gets helped into the ditch. So, we must introduce a small point of certainty. This is commitment. Commitment carries us through The Great Divide. Commitment comes from who we are, and exerts a demand upon what we are. I have just read again the aims declared at the beginning of the course. Consider them again for yourselves. Is this real for me or just fine words?

Commitment is to be practised daily. And here is a small beginning to this practice. It is an exercise called The Job For The Day (exercise omitted). There are three areas in which jobs may be done:

1. For ourselves;
2. For the house;
3. For the community.

The principle which I find helpful when confronting The Great Divide is this:

Establish the possible, and then move gradually towards the impossible.

So, when nothing seems possible, look and see one small action which is possible. And then discharge it. It may be as heroic as getting out of bed. And then cleaning your teeth.

The Level Three gives you a taste of what is actually involved in basing one's life on craft principles, whether we have any interest in playing guitar or not. Our rule of life is this: act on principle, move from intention. At Level Three we practice making a commitment for three months. Some of you have expressed interest in Level Four. At Level Four we say this:

In Guitar Craft we have three obligations:

1. The obligation to work;
2. The obligation to pay to work;
3. The obligation to accept the consequences of our work.

In Guitar Craft we have three rights:

1. The right to work;

2. The right to pay to work;
3. The right to inherit the consequences of our work.

But, we are not yet ready for this.

The situation is good.
My very best wishes to all you heroes.”

Wednesday 5th. April, 2000; 15.38

“Tomorrow is the first lie of the Devil”. This quoted by a Kitchen member, from their course a year ago, at a personal meeting.

22.38 The performance was a hoot. Actually, lots of hoots. More, an ongoing Hooting event. The performance, more accurately to report, was by the audience with Level One as spectators at their own show. But this time at least for a performance in the Gandara auditorium there were no plates of nuts, or bowls of soft & juicy fruit cut into pieces, distributed among the audience. Fruit pieces make a soft smacking noise at they hit Ovation, and almost no noise as they hit the players. The good news is, the fruit is fresh. The bad news is, to eat it firstly you must lift it off the floor & wash it.

An essay waits to be written on “The Art & Science of Heckling”. Each qualitative “world” has its own degree & quality of heckling. Heckling moves from the disruption & oafishness of the basement, where this is an expression of dislike & thwarted expectation, to (theoretically) the promptings of a Holy Fool who offers the performer a reminder, example & encouragement to enter & embrace a world which is true, and is real. Most audiences can only aspire to have a character like this among them. But on this course we do have a Fool, and a good one.

Intentional heckling, undertaken as a piece of work, requires (as a bottom line) goodwill and (if possible) compassion. Without this, little is achieved in the best interests of the performer. And, therefore, the audience.

Tonight’s tendered reality-checks were offered in good & high spirits. The pretensions of any performer is immediately recognisable. Here, each member of the audience has themselves been in the same place, several times. Clevernesses, hot licks to amaze & dazzle, rip-offs & themes of questionable provenance, just don’t work here. And while falling flat the rug is also pulled from under the conceits of the performer, to assist their speedy downfall. Support is offered by the audience when their reminder is recognised & accepted without undue complaint. But any irritation shown by a performer is the end of their performance. Look out, dude. You do *not* get irritated with an audience from Latin America, particularly one which is better educated than you are, more proficient & practised, and with a sense of humour sufficient to sustain life during the hard years.

One player, using a small amplifier, discovered that the electricity supply to Gandara is not completely reliable; especially when an audience pulled out a plug to encourage rapid thinking on that player’s behalf. After all, it’s the recovery that matters.

The first show was hard to hear, above the audience, from just in front of the stage. A second show was recommended to take place immediately, on the grounds that it would be a very bad idea to upset an Argentinian audience that wanted more. Then, immediately after the end of the second show, as if turning on a coin, uproar disappeared and silence entered within seconds. Ten minutes later a speaker watch announced: "It is ten o'clock and no seconds" (in Spanish with a Madrid accent). This prompted hoots of laughter and a shout of "It's a sign!" followed by more hoots of laughter. Then, once again within seconds, back into silence.

After 30 minutes, this intense embrace by silence gently released itself, and little tasty biscuit cakes given to the course by Charlina (the visiting mother of Christian de Santis) were distributed at the door.

"It's a sign!" is a running shout of this week. Whenever the lights have dimmed, and electricity supplies to Gandara are not completely reliable even without assistance, the call has gone up. This is of course a joke. But somewhere within the joke is the recognition that something is in fact underway here. The sceptic might well say: "How do we know?". The answer is experiential. Here it is. If you wish to taste this, stick out your tongue, Baby Blue. Otherwise, don't concern yourself & have an easier life.

Some things protect themselves by being what they are.

Thursday 6th. April, 2000;

09.17

The morning sitting moved one more step towards being physically settled.

Blue has returned to the sky. The grey overhang now feels lighter, and shafts of sunlight striking the grass bring hope. After breakfast I sat just within the entrance of the courtyard which lies at the heart of the seminary. Simply moving across the threshold welcomes an entrance to another world: the sense of space & time suddenly shifts. If anyone doubts the capacity of architecture to shape our experience, they might try this for themselves. But they'd need to find their own seminary and their own interior courtyard.

Hernan has visited me with a schedule of today's events. These are based around a public "Recital de Guitarra" by the Kitchen Team in the chapel this evening. Father Horacio & his group are coming from Buenos Aires & the village are invited. Donations are invited for Caritas Argentina. Not all the money contributed by Guitar Craft to this facility in the past 5 years appears to have reached its intended destination. Accordingly, the last time a Team performed in the chapel the (then) new bishop invited donations in food. This time, a new regime now in charge of the seminary, donations in food and/or cash are invited.

It is hard for an Anglo-Honkie from G7 to experience a sense of real poverty, although in some parts of the English countryside & inner cities this is frighteningly apparent. But here, it is different. The Kitchen Team do our shopping in the nearby town of Chascomus. On the last course, over lunchtime & just back from shopping, Hernan told me that a single mother in Chascomus had thrown herself under a train. The reason: she could not feed her child. But were her child to have no parent, the orphanage would care for them. So she threw herself under a train, this the only way she knew to provide care for her child. And then Hernan added: "This is the third single mother to have done this in Chascomus this month".

There are Crafties here who work for less in a month than an unemployed person in the UK receives in benefits. The wife a Crafty who came here early, to work on the fabric of the building, was unable to visit him at the weekend. She was sick, but to keep her job rested at weekends to recover sufficiently in time for her next week's work. Some Crafties can't afford the 'bus fare to the seminary from Buenos Aires (\$30).

The Buenos Aires Guitar Circle support each other as they are able. On Tuesday Hernan is visiting the octogenarian parents of a Crafty who died of cancer recently (he was 47) with donations from other members of the Crafty Team. Life is financially hard here, and getting harder, but the networks of family & friends appear (to a visiting Anglo) to be of a very different quality to those I see at home.

13.33 One of the gringos who appears, to me, to have an interest in Guitar Craft has not yet quite asked his burning question. As I was about to sit at the lunch table I followed a hunch, walked to his place and asked: "What question do you *really* want to ask me?" Gringo was unable to hear this question until I asked it a third time. "You mean, right at this moment?" I shrugged and walked away. He came up to the top table and asked if he could sit there (facing me but away from the room). "Yes, but that's the worst seat in the house. Better trying one of the flanks. But if you sit on the top table you must be prepared to accept questions or be presented with challenges". I note, en passant, that the top table is not a safe place to be: this seating carries with it responsibilities.

So, Gringo sat on my left and the only question he asked throughout lunchtime was "Would you like a coffee?" "No, thank you".

The Kitchen Team played 3 pieces and, judging by their faces, looked as if they were having a terrible time. A face holding an expression like this is known as "Guitar Craft Face". Something like a hairy, bespectacled, earnest, male Crimson-fan face but to the power of three.

What is the worst you might imagine about-to-be-becoming-happening in your life? Answer this question with a facial expression:

= beginning Guitar Craft face.

Then, remove from this face all possibility that life without pain is possible; hold the notion that joy has been extracted from the universe over eons by a cosmic suction pump twice the size of the universe itself; then throw in the concept of infinite time in which to practice the First & Second Primaries:

= Guitar Craft face up-and-running.

Hey! And it gets better even than this. Like, if you're German. Until Guitar Craft went to Germany, the Face was only in the early stages of development. And that's another story.

Thursday 6th. April, 2000;

16.03

One of the Level One has begun to insult me in Spanish. Mr. Ugo of the Kitchen wondered if I knew of this. Actually, yes.

Insults carry a certain charge which permeate whichever language is being spoken. Words carry intention, in the same way that notes passed around the guitar circle convey the state of their player. If we are in a bad state, words are unnecessary: posture, personal aroma & facial expression are more than enough to warn off anyone nearby. More subtle forms of negativity have shapes in the personal energy field, and are easily apparent to experts in energetics. But ordinary people, like us, instinctively & intuitively sense it. Probably, this is part of our animal nature; part of our survival mechanism.

Visitors to this diary, Elephant Talk, and those who take an interest in matters Crimson, are aware that not everyone of my personal & professional acquaintance look upon either myself, or my work, with unalloyed approval. But to be nasty to another, and effectively so, is very hard: our conduct shows us to be at least as much a jerk as the individual (whoever it is) we describe. This lack of grace & courtesy undermines our credibility as critic. But, there's nothing new about this observation. Some public commentaries & reviews, whether by a professional writer or former personal / professional acquaintance, radiates toxicity. I was handed a print-out of one such commentary several months ago: I sensed its dis-ease emanating from the paper. How is this possible, I wonder? The dis-ease which emanates from the words is something apart from the nominal grounds for disagreement. The formal points of disagreement may be formally addressed; what then remains is toxicity, but with no place to go. So, it festers within the disputant.

19.06 Two hours & 30 minutes of interviews with generous & interested national press & radio.

The disaffected member of the Level One was given the opportunity to leave honourably, but has decided to stay. Good: this is the better course of action.

Friday 7th. April, 2000;

11.46

A morning of personal meetings with Level One is now almost 3 hours underway. One stunning observation, based on genuine insight, from a Gringo regarding the harbouring & projection of negativity.

Last night's performance in the chapel was almost derailed by a couple of out-of-tune Level Ones. One of them intended to heckle & perhaps pelt the performers (this the character who has been insulting me in Spanish); the other adopted make-up somewhat reminiscent of Alice Cooper. Hernan called the Level One out of the chapel for a meeting. I suggested to them that the latitude of conduct permissible within the course was inappropriate outside of it; and in this case, disrespectful in the place of public worship by a Christian community. If anyone was unable to accept these conditions, this was not the performance for them.

The chapel was almost full with villagers, Crafties & their guests. I rarely experience this sense of community in a "public" place: good people & good hearts. Everyone was invited into the seminary where the Kitchen Team had prepared tasty foods & desserts, also a little wine. The Secretary of Culture for Chascomus, who is a painter & carpenter, presented me with a

painting as an expression of gratitude for his son attending GC (in the Kitchen Team). The painting is in a box, also made by him, so that it may travel safely on the 'plane to England.

Some of the Staff congregated quietly in our sacerdotal area with a little of the several wines brought by the Chilean team, some tiramisu & chocolate mousse. Outside, the Level One were vibrating at moderate amplitude.

14.27 Of the two L1s having difficulties with the course, one is addressing this honourably after his fashion. The other has gone to his bed, is being visited and taken food. His problem is, I believe, drug related. If I needed any more information on the damage of drugs (having seen management & players sliced apart by this), then to look into the eyes of people in a GC circle who are unable to process & apply simple information, no more proof is needed for me.

I've had this discussion with pot heads in GC before. They know that none of the above comments apply to them. There's nothing wrong with smoking dope, even on a daily basis over years. It doesn't make them dull, careless of their personal habits, nor blunt the acuitive edge which differentiates the excellent from the merely sufficient.

I am not making a moral judgement on the behaviour & choices of another: life is hard, & how we deal with it in response is ours to make. But if I am asked to make a call on what is possible for a player's efficient functioning; how to help prepare them for the place where music & musician meet; & then I see their head in one place, their hands / bodies in another, & an utter failure to put the two together; then I make my call. Drugs have no place in Guitar Craft. The young man unable to get out of bed or take off his makeup is only one of many examples of this. What people have done before they come here is not a concern. For some, GC is part of rebuilding lives shattered by drugs (e.g. on this course, heroin & cocaine). And some never quite manage to put the pieces together again. Isn't this a tragedy?

18.58 At 09.00 this morning Martin & Fernando prepared the Level One in the first part of the Division of Attention Exercise. The second part was shown this afternoon at 15.00.

At 17.00 we met for the Level One to present their work in Qualitative Endeavour. The instruction was to choose one small part of their work from this week, & discharge it superbly. They began working on this yesterday. Then at 18.30 we met for the last Level One circle; with circulations & vrooming chords. It was all terrible & a disappointing conclusion to their circle.

The following (with one small edit) was posted at the end of teatime:

Final Letter to the Second Guitar Craft (US) Level Three.

Parsons Restaurant,
Fulham Road,
LONDON.

November 27th. 1989.

Guitar Craft Services,

Rt. 1, Box 278-M,
CHARLES TOWN,
West Virginia 25414.

Dear Team,

This is my final letter to the course. Our final day is December 5th., and on this evening The League of Crafty Guitarists and myself are playing at the Whiskey A Gogo in Los Angeles. Twenty years ago this week I was playing this same club as a member of King Crimson. Eric Burdon was in the audience, and he booed us. Actually, I didn't hear him. I was told of this afterwards. Tomorrow, the 6th., our course in Los Angeles will complete. Please send to us your best wishes. On the 7th. I shall fly to London, en route for Italy where some of us will meet again.

After three months of living together, we will probably have dropped some illusions of community life and our personal capacities. We may be happy, even enthusiastic, about the prospect of changing the world. But are we able every morning to practise sitting for 30 minutes, doing nothing? It is necessary, although exceptionally painful, to see what we are. Our motivations are unpleasant, selfish, unkind, our minds a windfall of prattle, and our capacity for action uncertain at best. When we meet ourselves face to face, it is an unpleasant surprise. Probably the most difficult personal work I have ever undertaken is to bear what I am. If I am able to find forgivingness for others, I may find forgiveness of myself. If I am able to find forgiveness for myself, I may find forgivingness of others. The two are inseparable.

The first moment in which I was present to myself in this life was very early, probably about 6 to 9 months old. I remember the experience of being in my pram when a 'plane went overhead and made a noise. The Fripp baby was disturbed, moving in the pram to try and cover itself. At this point, there was a clear separation between who I am, and the little creature I was living in. I had no fear, but the Fripp baby was disturbed and sucked me into its concerns. This clear experience of being apart from the human animal, with a sense of both who I am and what I am, and then the two merging, was my debut in the world. This experience has remained with me since. I know that I am not my body, but live inside this human animal. I also know how easy it is for my animal matters to involve me in its concerns. This is a limitation and restriction upon my freedom of action. Is it possible for us to maintain a clear sense of who we are, and what we are, and to separate the two?

Some 28 years later, pursuing similar concerns, I spent ten months at Mr. Bennett's school in England, Sherborne House. A considerable cause of personal distress was the degree to which the whirling noise of my mind caught and held my attention. One day, while in the tape store which had become my responsibility, I realised that I was not my thinking. Neither was I my feeling, nor my doing. In a sense, this was a great relief. Nevertheless, I had a relationship with these instruments that operated and functioned, nominally upon my behalf.

A little time later, in the bitter cold of February 1976, while pushing a wheelbarrow of compost past the woodworking shop, in a flash, I saw that Robert Fripp did not exist. This insight probably lasted about half a second, if one measured it on a clock. It was a terrifying and frightening experience. Fripp was disturbed to see that he did not exist. So, I know that whoever I am it is not this creature I inhabit, neither is it the accretion of habitual behaviors called Robert

Frapp. But, who I am has a relationship with what I am, and what I think, feel and do. That is, who I am should have a relationship with what I am, and what I think, feel and do. And this is where we find pain and suffering. The relationship is distant and unreliable. I see the distance between myself and Robert Frapp and his concerns.

If this distance is of real concern to us, we develop the relationship. The Guitar Craft principle is this: we begin where we are. But, we have to know where we are. So, we do nothing and while we're doing nothing, we look. Perhaps we can do nothing and look, while having a left hand. If we can do nothing with a left hand, we are on the way to doing something with a left hand. After three months, perhaps we know where we are not. That is, we have dropped some illusions. We have a clearer sense of our reliabilities, impulses and capacity for action. Hope lies in this: music is possible, despite what we are.

In time, and with practice, our centre of gravity changes. Our everyday concerns and worries remain the same, but we no longer live in the same place as the concerns and worries. They live in the basement and the cellar, and I live on the first floor. Here, my perspective is quite different. I see things in a different way. One day I visit the second floor, and have another perspective from the vantagepoint of being above, and looking down on the first floor and basement. This is a place where I would really like to live, but there isn't enough room for my baggage. So, I go back downstairs. While I lived in the basement and cellar I believed that I lived on ground level. This was an illusion. To move upstairs, I have to know where I am, without blame, excuse and apology. Then, I can visit upstairs.

Life in the cellar is dark, and because of this is lonely. In the dark we can't see other people. When we visit upstairs there is more light, and we can see other people. Perhaps they can help me? This is true, but only to the degree that I am able to help myself. The degree to which I am able to help myself, is the degree to which I am able to help them. The degree to which I can help them, is the degree to which I can help myself. When I visit the second floor, I see that these other people are members of my own family. Members of a family are the family. That is, in a sense, they are the same person.

It is a common error to believe that we are on our own. This is an aspect of egotism, of failing to see beyond our nose. Help is always available, but we are not. The one greatest lesson of Guitar Craft, for me, is the inexpressible benevolence of the creative impulse. Despite who we are, help is always available. Despite what we are, redemption is always possible. But, this does not occur by accident. It involves our co-operation. It is necessary that the creative impulse enters the world. So, our co-operation is also necessary. When we make a commitment to enter this sphere of co-operation, all the rules change. We enter a privileged situation. In my view, this course has been operating under an umbrella of protection. This is also true of Guitar Craft as a whole.

In the creative world, processes are simultaneous. In our everyday world, they unfold in time. A creative event is eternal. That is, every moment which we experience as different and sequential actually occurs at once. That is, in one moment. The eternal event is simultaneous, but in potential. The actualisation of this potential event is governed and restricted by the necessary rules of operation of the everyday world. The world of the eternal moment and the world of sequential time can and do come together. When we experience this interface, we experience the presence of the eternal event. This implies that it is possible for us to experience and access the

complete Guitar Craft event. In a way, the future reaches back to invent the present and repair the past. If we recall the performance by The LCG on the Level Two weekend, we may recall the visit by a substantial presence.

But, there is no security as we generally understand it. There are no guarantees that Guitar Craft will stay on course, or survive at all. If Guitar Craft is to become what, in potential, it already is, our co-operation is necessary. These three months have only been a small indication of what is involved. There are exercises which we can practise to develop our capacity for co-operation with the eternal moment. When necessary, and when we are ready for them, they will be made available to us. But, until we have some idea of what it means to be alive within our left hand, little else is possible.

At the present moment we are struggling. The office is underfunded, we don't have a home, we are unable to meet the requests for help which are made of us. This will continue throughout next year, and change in the Spring of 1991. Then, a new current will appear and carry us with it, if we are ready. Of those among us, who is able to make a commitment to this next year of preparation?

My very best wishes to you all.

22.18 Dinner, as at lunch & teatime, featured performances from several combinations, including "A Horn Up Your Ass". They included a rendition of "Happy Birthday" to Claudio of The Big Time Trio. Extraordinary.

Over dinner conversation between RF & HN. Last night a mosquito got RF (at 01.45). Hernan said he was got at 03.00. But no mosquito sucks blood from Hernan Nunez and lives, I report. This foolhardy mosquito was squashed flat shortly afterwards, fat with Nunez blood.

Personal meetings with Martin & Fernando after dinner, and a meeting with the Buenos Aires Guitar Circle & performance team. Then the final meeting of the course began at 20.30, with comments on the week invited from all the house. The course was declared finished for some, and completed for others, at 22.15.

23.10 A practical meeting for those leaving at 22.30. A meeting is beginning in 5 minutes for anyone interested in the August Guitar Circle month in Kiel. This is effectively a Level Two course. Clueless proctomancers wander around for a month while Hernan, plus help, wait for the penny to drop.

Errata: An e-mail from Tony Geballe corrected me: he was on the third GC course, not the second as reported:

"I was on GC III, May 1985, along with Trey, Ralph, Adam, Novak, Miley, Mazza, and several other memorable characters..."

And an e-mail from Tom Redmond:

Q: "What do you do when you are in despair?"

A: "Despair"

Saturday 8th. April, 2000;

08.10

The first van is close to leaving. A millage of Crafties are preparing to get on & be driven away. Breakfast was set for them at 07.30. For those not leaving immediately there was a morning sitting for those who wished to attend. They are staying for the cleaning & tidying of the seminary, to leave it in good order: this is part of the completion of our courses & visit.

09.39 Attitudes. Attitudes.

The attitude that life owes us something, if not everything, encourages life to thwart our endeavours.

This life may not provide justice, but it is fairer than we might like it to be.

When we act as we like, we get what we want; but not what we need.

10.53 Acts of heroism in the packing department. Gifts of dulce de leche, fine Argentinian wine, a book, plus more besides, have overfilled the Happy Gigster's Travelling Compendia. The Team remaining behind to clean the house are preparing lunch for us at noon. Then Heman & I are off to visit a club in Buenos Aires which Heman feels would be suitable for Crimson.

So, what of this course?

This is beginning Guitar Craft's third 7 year life cycle. The first period was one of expansion, the second a kind of Level Two. My own participation was limited by nearly seven years of litigation. But, had that not happened, I would have found another way for Crafties to become less reliant upon me, and more able to work from their own initiative. Now, this course coinciding with the 15th. anniversary of the first, there is a sense that something is beginning again.

When we arrived here last week, I mentioned to Hernan a dream on my first night in Sherborne House. The dream has never left me. My Mother & Auntie Evie had driven me to to Sherborne, Gloucestershire, from Wimborne, Dorset, via the Polly Tea Rooms in Marlborough. My Mother was horrified to leave her son in the Spartan dormitory which housed myself & 5 other men for the next 10 months. On that first night, before the beginning of the course & the arrival of the other men, I had the dormitory to myself. Of the dream: I have never forgotten it, nor quite understood it, and continue to recall it.

One interpretive (beginning) lesson from the dream is that a third Guitar Circle is necessary, in Europe. Heman has a feel for this, and has already been holding Summer projects in Germany. The Nunez family are in Kiel, so it makes sense that anyone who wishes to extend their personal work to involvement in an ongoing Guitar Circle community, this is a beginning point. In the next room Heman is presently discussing the idea with several interested young men.

But now: to close down the computer & pack it into the computer knapsack given to me by my Sister, hoping not to crush Bill Forth's chocolates & Heman's Mother's dulce de leche cakes.

Guitar Craft - Lebanon, New Jersey, USA

Level One & Level Two

Friday 1st. September, 2000; 20.35

Baptist Camp, Lebanon, New Jersey.

The Guitar Craft Level One / Level Two combined course has not quite begun. Curt Golden is catching the red-eye from Seattle & will be with us for breakfast tomorrow. Frank Sheldon's assistant Alexander Teacher is lost somewhere, perhaps at Newark, perhaps approaching Newark, perhaps somewhere else entirely. Frank & Jonathan, the Registrar, are on their way to the airport in hope.

Dinner at 19.00. Silence visited just before 20.00.

My own journey was early – up at 04.52 for an early check-in: Nashville-Chicago-Newark. Bill Rieflin, Frank, Fernando Kabusacki & Jonathan Brainin met me at Newark, then we set off for this series of cabins & buildings in New Jersey. It's funky, with no privacy & no online facilities, bathrooms & showers in a cabin nearby. Very hot, very humid, and then a downpour.

Hack. Hack.

Saturday 2nd. September, 2000; 08.36

The same act in different worlds is an entirely different act, with entirely different repercussions.

11.31 The Inaugural Meeting of the Level Two, which began around 09.33, acknowledged that the Level Two is underway. The team introduced themselves and, where appropriate, presented a short history of their GC background, what they have been doing in between then & now, what brought them here & what they wish to achieve for this course. Several were regular participants in the first years of Guitar Craft, and are now reconnecting after several years. A few had powerful dreams leading them here.

12.52 Our guitar work began in the Circle & addressed the division of attention, intentional playing, & the blending of feeling & sensation. We have not much looked at the discipline of the heart in Guitar Craft. It feels appropriate that this is now beginning.

16.29 At lunchtime: several good comments on our morning's work, particularly with regard to the blending of energies & how our state & functioning changes when we act intentionally. This afternoon the Team are learning "Calliope", in response to interest expressed this morning in learning repertoire.

20.11 The Level One have arrived to a good first meal, other than it had no dessert. There were fruit plates on the table to substitute for dessert but the debate continues: does fruit qualify as dessert or is it just food? I have no doubt on this subject.

The house rules were declared with a full refund offer for anyone arriving who felt unable to accept them.

22.41 The Level One was declared underway at c. 20.50. The introductory meeting lasted around 100 minutes for the nearly 90 participants to introduce themselves.

Hack. Hack. Hack. Cough.

Sunday 3rd. September, 2000;

09.18

Much of the early work on GC courses is intended to gradually prepare the player to withstand downloads of high-quality energy, when and if that occurs. When we are personally unprepared & Music Central comes online, it's possible that a fuse might blow. This becomes apparent in, for example, arbitrary behaviour, counter-productive decisions, the delusion that The Big Me has created this Work Of Art, & that not only am I special but that I am *really* special. Even, that I was created uniquely by God to serve A Special Purpose. This last one requires discrimination: we are each of us created unique & to fulfil a particular destiny. But for that we have to move through the conditions of our fate.

Our early work in GC also aims to create situations & conditions where we may have a direct taste of higher quality experiencing, and a sense of what life might be like if we were to step outside the mundane. Then, we continue to have a connection to the mundane, but we recognise it's not where we properly belong. If this taste of "real living" has a resonance for us, then perhaps we might take a shot at learning how to row upstream.

12.22 The first Circle meeting with the Level One at 09.45 addressed, inter alia, intention, listening & the function of the left hand.

The GC course at Gandara earlier this year completed the second of Guitar Craft's life cycles. This course is the first within the new life cycle. This implies a change of focus within the community of more experienced Crafties, and myself, that we may better respond to the necessities of Guitar Craft's creative future.

14.23 Several good comments at lunch on the work of the morning. And the Hell Boys performed "Hell Boy Cha-Cha-Cha".

22.44 The Level Two performed "Calliope" at dinner, plus a circulation. Many interesting & useful comments on the day.

The full Team meeting, with around 85 guitars in two circles – the inner and outer circles of Guitar Craft, as it were – pitifully attempted dual circulations before moving on to polymetric thrakking.

It is interesting to note how our experience of time changes on GC courses.

Monday 4th. September, 2000;

09.17

A performance at breakfast by Patricia Leavitt (singing) and the Level Two ("Eye Of The Needle". An authentic performance, in my view: it had substance & presence, regardless of guitar mistakes & out of tune bottom strings.

Personal meetings begin for me this morning.

14.04 The hardest part of any course: the Parade of Right Hands after the introduction to the Second Primary.

17.49 When we are in the basement, we don't know that we are in the basement. We only know we *were* in the basement when we've left.

Several of today's personal meetings addressed the construction of an interior architecture, that we may find a place of our own in daily lives driven by distraction, the mundane, earning money to support a family, and where there is little time available to pursue closer promptings.

18.53 I left the Level One Group Meeting, to allow them the space to differentiate between down & up beats.

20.08 The Level One felt they had made so much improvement without me, they are working on their own this evening. So, this gives me time for a "staff meeting" & a meeting with the Level Two.

22.30 The meeting discussed the attention & energy exercise we are practising, functional aspects of the musician's three disciplines, and comments on the course.

Tuesday 5th. September, 2000;

06.48

The temperature has dropped drastically overnight. This morning, walking back from the shower cabin around 06.30, the air had the "smell" and bite of a September morning. This "smell" reminds me of my first Friday at Queen Elizabeth's Grammar School, Wimborne.

We were on the school playing field in playing gear, behind my Grandfather's house in East Borough, and about to play rugby. That Friday had the autumnal smell. I was a new boy, the only boy who had moved from Broadstone Primary School, and knew there were another five years to endure.

09.41 Very good comments from the Level One on their work in the Circle. The power of circling seems to be becoming apparent to several of them.

11.52 The Level One group meeting addressed circulations of notes, rhythm work & circulations of chords in meter.

Today's first batch of Level One clients have come and gone. Once again, The Parade of Right Hands.

15.59 Strong performances at lunch. Then, another Parade of Right Hands.

16.31 One of the Level Two Team has an under-nourished feeling life, so we've just walked out onto the property and I've introduced him to an oak tree. Trees are wonderful creatures, and so accepting of us.

23.10 The Level One Group Meeting with guitars was sheer mayhem. Something like 8 different possible downbeats among the 43 players. And none of the downbeats had any relationship to each other.

Dinner: silence visited three times with performances in between. This was a blessing. Silence finally left when dessert arrived. Good & perceptive comments from the Team with a short break and then more comments.

Then: a challenge for the Level Two: Hell Boy Promotions have arranged for a performance at Miller's Tavern nearby for tomorrow night at 23.00. The barwoman is excited about having live music, and is putting up posters: "Adventures In International Guitars".

Tom Redmond & Patrick Smith went off last night as a priority from the Staff Meeting to check local bars, an assignment they accepted without demur. The barwoman asked Tom what kind of music the "international guitars" played. She presently believes, on the basis of information received, that some of the music is "like jazz" (Patrick) plus country & western songs and Elvis covers (Tom). "We like Elvis" she said.

Level Two has their work assigned for the next 25 hours, so we returned to the desperation of Level One: what to do?

The Total Commitment option was put up for grabs. This is where you go into a room and don't emerge until a task is completed. Given the scale of the task, we waived the "no practising past 06.00" rule, which allows for a minimum of one hour's sleep before rising at 07.00. Was this a feasible option? Once upon a time on a Guitar Craft course, I would have stayed up through the night with them. But now, in Guitar Craft's new & third life-cycle, the focus of my work has changed.

But hey! we fielded a full team with the Level One. Frank & Sandra of the Alexander / Energetics team, Bill Rieflin & Victor McSurely & Fernando Kabusacki & myself, in support of the miraculous. Bill & Victor were prepared to sit through the night, if needed, until the Level One nailed their particular challenge: circulating in opposite directions of the circle, leaping seats, in 5/8 and 7/8.

With help, they were honourably close. Without help, it may have been a long night.

Wednesday 6th. September, 2000; 07.03

Met the Hell Boys in the shower cabin this morning at 06.30. What more can be written?

Cough cough hack hack continues, but last night & now this morning the beginning of a sense that it is leaving me. There have been several firsts on this course, and one (most regrettable for me) is that I sit here in the Garden Centre (aka The Love Shack, aka Cabin 11) during the morning Practice of Doing Nothing and hack away privately. Two attempts at sitting with the Level Two at the beginning dissolved in coughing fits.

14.46 Performances at breakfast.

The morning's Level One Group Meeting was interesting in that nothing we achieved last night appeared to be available this morning. I left and they split into smaller working groups. On to personal meetings & hands which continue to parade.

Silence visited again at lunchtime. Good observations from the teams. The Level One wonders what it takes to be a group. "A group forms in service of an aim". Frank presented them with a challenge: running the house & kitchen to support Level Two in meeting their performance.

23.32 At dinner: comments on the day's work & discussions in preparation for the show.

A Group Meeting at 22.00 with the Level One to present an introductory approach to The Practice of Doing Nothing. I was lured into presenting my aim for the week, and found myself saying things that I had no intention of saying.

Thursday 7th. September, 2000; 09.45

Comments over breakfast from the Level Two on their performance last night at Miller's Tavern. The Level One were waiting for them outside the "ballroom" as they came back from the show. Overall, the performance is judged a success. The performers outnumbered the audience by 3 to 1. Maybe that helped.

The task for the Level One today is the application of quality: to find one small part of what we do and discharge it superbly. This must very small, easily definable & (therefore) easily verifiable. Like, sitting on a chair. This is a frequent occurrence in the life of a course (at the least). Are we able to sit on a chair effortlessly & without unnecessary motion? Or, put the guitar on the body. Or learning the notes in A natural minor at the 7th. position.

12.06 A Parade of Hands for much of the past 2 hours.

12.52 Perceptive comments in the past hour of personal meetings.

16.27 Performances at lunchtime continued. The personal meetings this afternoon addressed the subtleties of practice more than how to hold a pick. Several perceptive comments. The New Jersey Guitar Circle is about to arrive for our meeting.

21.03 The Level One presented the results of The Application of Quality. This was mostly poor.

The tasks chosen were often too large. Like, playing a C major scale in the 7th. position but using our eyes to guide the hand to that part of the guitar neck. A more useful approach would have been to practise raising the hand to the 7th. position without using the eyes. Or, discharging an aim (itself a large one) within a group of people. We begin this exercise with ourselves: to move this to a group setting is a very large undertaking. Or to relax the shoulders, which is a good aim but, in the terms in which this exercise was presented, not a task which is easily available to external verification.

This is a powerful exercise, and its repercussions take place in several worlds. In the physical world of our hands, once we have established a small & particular part of a practice – like being able to place our hands on the guitar at certain points without being totally reliant on the eyes for guidance – this becomes a point of reliability and, in time, even of certainty. So, in the future very little attention need ever be lost to this simple yet frequent action - once it is established in our practice. Then, once this small action is reliable, we move to establishing reliability in another small part of our overall practice. These small "bricks" of reliability, once set in place, become foundation stones.

A quality is not governed by number. So, a "small" act of quality is as large as a "large" act of quality. To perform an act with quality is to juxtapose the worlds of the conditioned & the unconditioned. When quality is invited to enter an action, and enter the world of things, it then "spreads" & becomes available to others, to the extent that they are able to respond & accept.

Friday 8th. September, 2000;

07.04

The beginning of the Final Meeting for the Level One began at 21.15. Several people spoke of their subtle experiences during the past few long days. These mentioned their experience sitting in silence in the Level One circle last night. Others mentioned silence, and the power of working in the circle. One commented that his experience was not as these. And those who normally make no comment made no comment.

Tom Redmond made travel announcements. Then, at 22.18, I presented the final challenge: at 22.30 two school buses were arriving. The first was to carry the Level Two back to Miller's Tavern for more Adventures In International Guitar, the second to carry the Level One & anyone else from the Kitchen Team & Staff who wished to go to the performance.

The danger for the Level One particularly was to blow the energy generated by & available from the course. The challenge was also the last opportunity for those who haven't quite arrived on the course to do so. This constituted the middle of the Final Meeting.

And then to Miller's.

On our return the key Kitchen Team, responsible for moving our functioning course kitchen from one building to another, had 80+ boxes of stuff to be moved between one building and another. So, some 80+ people formed a line and passed the boxes from one to another up the hill, from one kitchen building to another.

Then we began the ending of the Final Meeting, with a few more comments being made. Just before 01.20 the Level One was declared: finished for some, concluded for others and completed for more.

There were several firsts to the course; the worst for me that this is the first course where I have not been physically present in the morning sittings, nursing coughing fits in the solitude of The Garden Centre.

A highlight of the course were the 3 visits of silence during Tuesday's dinner: gifts were brought.

09.37 Of the performances at breakfast several were exceptionally dismal. Good comments on the performance last night by members of the performance team.

The Level Two continues.

12.37 The morning meeting addressed passing the notes of C natural minor / E flat major one note at a time, from chair to chair. This is intensive work in the Circle.

14.29 One of the Level One has gone off in some high dudgeon: they didn't want to leave. It was "unfair" that when their course had ended, they were not allowed to stay on. During the Level One the energy of the course was sufficient to contain their disruptive tendencies. For this person, their behaviour took one particular form, constantly repeated, to which they were blind. Now the course is over, there isn't a "container" for this behaviour. So, were they to impinge on the Level Two without having the wherewithal to "pay" for their presence, they would disrupt it and without being able to know or see how & why.

En passant, I was hoping to be able to invite any & all of the Level One to stay longer, but the practicalities at the Lebanon Baptist Camp prevent this: the Christian Motorcyclists' Association & their Harleys have been arriving all morning.

One of the Kitchen Team has, independently, undertaken to perform for the Christian Bikers. This initiative is not "bad": it was made in good faith & with goodwill, but it was made without reference to the director of the course (RF). So, an undertaking was given without reference to how this might impact on other possibilities for the course. Then it moves to how the course as a whole is able to honour this undertaking, and find a place for that, without individuals on the course being committed to it. Add to this: the Christian Bikers told our kitchen person that they "get in the face" of other bikers (but without violence), that the Holy Spirit leads other bikers to them, and asked if our music "honoured God". For any Level Two who has difficulties with evangelism, upfront believers (of any background), and a defined religious vocabulary (of any tradition), there is endless possibility for schism, reaction & disputation. In other words, good grist for this course's mill.

A member of the Team came to see me before lunch: they had "seen music before it's composed". To put this slightly differently (and in my own words) they had had an insight into the World of Energies, the unconditioned. This is the "place" that music comes from, where all potential is present and before possibilities become actualised, and defined.

This was a "state" not a "station": a visit, not where the Crafty lived. But now, having visited, they know for themselves what Music might be like in the penthouse roof garden.

Silence is very much like this for me: limitless possibility, not yet committed. Neither can be known. The "frequency band" is above the "knowing" (even understanding) level. But once having visited, even though beyond words & what we can know, we know that this is how it is: we have had a "taste" of what is real.

18.44 Very good personal meetings. Real issues.

The Group Meeting at 16.30 addressed C natural minor once more (for 2 hours) and came within a semitone of nailing it.

20.26 Perceptive comments over dinner regarding the work in the circle. The "mistakes" aren't turning negative or engendering criticism of others. The goodwill is considerable.

The course is a little tired from 2 late nights, plus re-equilibrating & recalibrating to smaller numbers – 40 people! How amazing that this seems to be a small course now. The first course in March 1985 was 16 students plus Robert.

The team visiting this week includes people from the very beginning & the early years, some of whom haven't been around for up to a decade.

Saturday 9th. September, 2000;

07.11

In Glasgow, Toyah's appearance on the Saturday morning BBC TV show should have recently ended. In New Jersey, the sky is blue with a slight haze, it's pleasantly cool, and the sound of traffic from the nearby highway never stops.

Good comments over breakfast. These are rarely bright opinions but comments from experience.

My own two solutions to the insuperable problems of The Right Hand:

1. Send them to Curt;
2. Whenever anyone asks me a question about their right hand, accompany it with a \$20 bill.

Personal meetings from 10.00

12.16 The personal meetings so far have had less to do with The Right Hand than usual. Hooray!

This classic from a personal meeting with one of the more experienced Team, from when they were courting the woman that became their wife. The Crafty took his woman to a Frippertronics show at Washington Square Church (July 1981). Anyone familiar with Crim/RF might immediately rush to judgement: this is not a relationship destined to last beyond the following morning. However, the opposite was the case. In later years she said to him: "I thought you must have something very deep in your soul to get something out of that noise".

17.19 My last two personal meetings. The volunteer performance team will shortly be going over to the Bikers For Jesus.

The centre of many personal meetings has been how to begin to establish an interior architecture. A recommended approach is:

Begin & end the day with definition, intention & love.
Establish hourly points of certainty & contact throughout the day.
Establish the morning sitting.

If an evening sitting is possible, even better; but the morning is key. There are energies made naturally available through the process of sleep & which enable us to actively engage in the early morning, before the world wakes up, begins to think, and send out vast clouds of negativity into the psychic atmosphere.

With this in place, something else becomes possible.

18.47 Crippling heat has returned. Coughing fits continue, less frequently.

Shortly, my last dinner & meeting with the course before flying home tomorrow. This course has been a turning point. "Gifts were made" this week, but well beyond a frequency range where I can know what they were. But, I have a sense of one that was given to me.

Monday 11th. September, 2000;

16.52

Deepest Dorset.

The Level Two completed at 22.19 on Saturday evening.

Guitar Craft - Sassoferrato, Italy

Level One & Two

Wednesday 17th. January, 2001;

21.52

Convento di S. Maria della Pace, Sassoferrato, Italy.

Franciscan monks live in the other half of this 1940s building. This side seems to be used as a hostel. When Hernan & the preparatory team arrived, they found a dirty, trashed & very cold house with dirt covering all surfaces. Some rooms remain uninhabitable even now, and some habitable rooms have no heating. But the kitchen is much better than many we have used on courses. Originally, this was a facility to train priests; perhaps the supply of aspirants has dwindled.

An interesting point: Guitar Craft needs a facility for courses, but often the building needs Guitar Craft. There is an energy that appears when GC is present which is available to contribute to the spirit of a house. Our main meeting room here was, yesterday, the chapel. The monks helped to move & clear the space, so now we are able to benefit in turn from the spirit of that space.

There have been more cancellations than usual, for a variety of reasons. A new one is the need for visas in Italy (& Spain) for visitors from South America. This leaves 77 people if everyone arrives. Hernan feels that we may lose a couple more.

Cathy Stevens, here to present the Alexander Technique, and I met at the gate in Heathrow Terminal Two. Happily, the Alitalia journey was fine, albeit with a layover of 3 hours in Rome. Alessandro Bruno, also of the Europa String Choir, collected us at Ancona and drove us the 75 kilometres to Sassoferrato.

Thursday 18th. January, 2001;

09.02

The Preparatory Team have a house meeting to address what is needed for the house to be ready for the Level Two beginning this evening. The fabric is beginning to gently warm up, heat being too strong a term: Hernan says there has been no heating in the building for at least a year. I hear a drill: this may be the telephone company uttering obscure rites of necromancy over the pay `phone at the end of the corridor below. The chapel is now quite warm, as is the Level Two & Staff corridor.

Hernan continues to call the Level One corridor "Hell". Some doors are locked, to prevent an innocent seeing the terror lurking behind them. The three most striking elements of Sherborne House were firstly, the cold; secondly, the cold; thirdly, the ongoing physical discomfort. Our Hell is nothing compared to Sherborne's Hell. Presently, Sherborne House (in Gloucestershire) is a country house conversion (c. 1980) into expensive apartments. Acknowledging the weakness of my flesh, I'd prefer living there now to in 1975-76. Acknowledging my aspiration, I'm now ready to benefit from going there whatever the temperature.

Silence walked into the dining room at breakfast, and offered to hang around. But no-one said welcome.

18.25 Boy, it's cold. Not terribly cold: warm enough to know that you're cold. Hernan's office is warmer than Room 8. He says it's because the room is smaller. I'm inclined to believe that the draughts from the window here are a significant negative contribution to the temperature. The glass doesn't fit in the frames, although efforts have been made to cover this with transparent grout. The wind blows through the gap between the top of the glass and the frame. It's still warmer than Claymont Mansion & Claymont Barn, prior to Guitar Craft, though.

20.21 Silence visited at dinner time, hovering gently awaiting an invitation to enter. We sat with silence for 30 minutes. There is:

Sitting with silence.
Sitting in silence.
Sitting with silence in us.
Being silent (alternatively, being silence).

Also at dinner: a performance team – "Il Commendatore Zucchini" - played "Funiculi Funicula" quite acceptably & Ralph Verde told a joke which connected itself to Guitar Craft within the acceptable six degrees...

1. Chapstick
2. Suzy Chapstick
3. SC photo session advertising chapstick in Apple Health Spa Jacuzzi c.1978 with RF in jacuzzi at the same time
4. Apple Health Spa the site of NST visitation (September 1983)
5. NST the Guitar Craft tuning.

Spooky or what?

22.03 At the Inaugural Meeting of the Level Two & Kitchen Team everyone was invited to introduce themselves & say:

who they are;
where they come from;
what is their aim for the week;
what brought them here.

The Level Two was acknowledged as officially underway at 21.08.

Friday 19th. January, 2001;

07.16

The heating was turned off in the night to economise: if we drive the heating full time the diesel bill will be greater than the total charge for all the students visiting the convento for the week. But at 06.45 the heat was sufficient and the water hot enough for a toasty shower.

Thermal underwear is out of the suitcase and kitted. Prior to Sherborne thermal underwear was a source of great amusement to me: how could anyone wear such stupid looking things? The answer to this was, & is, very simple: because they were extremely cold. New Yorkers are also very forgiving of each others' aberrant fashion sense when it comes to icy blasts from the North Atlantic, and for this purpose I choose to adopt my adopted New Yorkishness.

12.49 At 11.00ish the first Level Two / Kitchen Team meeting with guitars. We addressed the division of attention, but for some the effort of breathing while sitting on a chair was challenge enough. Martin then became available to work with the Primaries, and Guillermo with repertoire.

13.53 Comments over lunch on this morning's work have set the direction for this afternoon: The "Well" Project, or Quantifying The Qualitative.

How good is "well"? Guitar Craft requires greater definition than this. So, how much is "well"? The suggestion is 10 bars of 7 in each direction around the Circle (ie 20 bars), 3 times, of a circulation exercise. I am meeting with the Level Two at 17.00 to be presented with the results.

16.35 One of the Kitchen Team called to cancel: sadly, his wife has lost one of their twins & the responsibilities to his family have a greater necessity. Other characters are arriving for the Level One.

18.25 Three of the Level Two who found their Well Project "very difficult" are joining the Level One. Their challenge is now how to lose their virginity twice. A quiet time is about to fall on the house.

Meanwhile the radiators in my room & bathroom stopped working quite a long time ago and a local plumber has been bleeding them of air and dirt. He has been smoking while doing

this and Room 8 is now polluted. He has asserted his right to smoke and in return I have asserted my right not to quibble in a situation where discussion & debate is not a viable option. But the radiators now work, and the window is open to allow the smoke to leave and fresh air to enter.

19.00 The creative impulse animates whatever instrument is made available to it.

20.11 Nearly all of the Level One arrived in time for dinner. Silence visited for 10 minutes and then the house rules were declared. Anyone who felt they were unable to accept them were invited to leave. No one left.

Customarily, the introduction to Level One house rules includes the statement that nothing is compulsory on GC courses, save for drugs. To this item, for this mixed course, I added a rider addressing sexual relationships. On longer mixed courses this is an issue which is necessarily discussed and covered by GC house rules on honourable sexual conduct. This week, coupling is not appropriate.

20.42 There has been an information download going on since this late afternoon: I have been granted insights into the process of practising, and how that relates to craft techniques. Wonderment. Joy. Bliss arising. Thank you. Thank you. Thank you.

22.55 A long introductory meeting divided into two parts.

Saturday 20th. January, 2001;

07.17

Room 8 is almost what might be described as warm.

08.38 Fernando & his wife arrived late last night, and Greg from Seattle even later. A solo performance.

11.13 I met with the Level Two at 09.30. We set 3 areas to address:

the calisthenic; physical concerns with left & right hands on the guitar
fingerboard knowledge;
one personal item of practising the person.

Everyone is asked to choose one small issue in each area to focus upon, with a clear aim for what is being undertaken. Define the aim simply, clearly, briefly, positively. Then, how well we do in addressing that aim can be clearly verified.

There is a bus leaving with "C Major" on it. It will be leaving & if you are not on board you will be left behind. Guitar Craft is moving on.

Then, at 10.00, the first Level One group meeting with guitars. We began where we were, then moved to circulating, then to beginning the First Primary. Martin, Luciano &

Guillermo took over at that point.

14.01 A solo performance at lunchtime of two pieces by the breakfast player. One of his pieces was the same as at breakfast but this time without a reliance on visual cues: he wore a blindfold. Plus a performance by The Hell Boys. Several comments were made on the morning's work.

Saturday 20th. January, 2001;

20.13

Level Two have begun addressing chords in C major, and the scale of G major.

Level One have moved to counting while circulating, but counting four bars of seven all at one go - while sitting on chairs and breathing – is presently a step too far. They have also been shown two magic chords.

Several good comments over dinner, plus a new arrival for the Kitchen Team and 2 guests for the weekend.

22.11 The large guitar circle included nearly all the guitar players in the house. Circulating, counting and thrakking.

Sunday 21st. January, 2001;

07.20

Dreams & dreaming on GC courses would be an interesting chapter in The Book Of Guitar Craft.

11.21 Meetings with Levels Two & One. Level Two are currently working on how folk guitarists might strum along with simpering classics, and the Level One are beginning to address the right hand with Martin, Fernando, Guillermo & Luciano. Cathy & Saskia are Alexanderising their bodies.

12.08 Dan the Good recently sent this e-mail:

DanKirkd 1/8/01 6:18:07 PM GMT Standard Time
Subj: Fwd: Permission to use info on DGM website
What should I do with such requests in the future?

Forwarded Message: 1/8/01 2:27:25 PM GMT Standard Time
I represent a small upstart publishing company. Myself and my partner in this enterprise are both writers, and we have been very inspired by the mission of DGM. We would like to use DGM's statement about its business aims on our website (which is in the construction process), fully crediting you all, of course, and providing a link to your site. Certainly, we would have to change some wording because we publish books, not music, but other than that it would be virtually unchanged.

RF: The quick answer is, yes, with acknowledgement where appropriate. The work of DGM

hopefully supports the work of others. So, if the Aims can be usefully adopted by others, this validates our own efforts.

We also receive requests to use / quote from the aphorisms displayed on the DGM website. These are mostly drawn from Guitar Craft. An early form of the aphorisms was printed as a poster under the heading of "Guitar Craft Monograph No. 3" in 1987 and has been out of print since.

DGM works in the marketplace, which Guitar Craft does not, and so acts under a series of constraints which don't apply to Guitar Craft. The public (and many private) aspects of DGM / KC / RF are subject to an ongoing series of public commentaries which are an almost total waste of energy: destructive at worst, and somewhere between a distraction and a disturbance at best. A small proportion of well-considered posts appear among the commentaries, with connections to people who otherwise I would never know. I am grateful for both of these.

The most valuable data is provided unintentionally by ET. On constant display: the sheer terror of witlessness, breathtaking arrogance, projection, selfishness, carelessness, self-deception and dishonesty with which basically decent, honest, literate and reasonably well-educated people assert & trumpet in public their right to live sub-human lives. After all, why live in sunlight with clean & happy friends when there's a lonely, dark, damp & squalid basement available for occupation?

Guitar Craft activities are usually held in private. There's nothing secret about Guitar Craft: most courses are available to the interested public, and an increasing amount of GC information & reportage is becoming available online. Diaries of aspirant Crafties are becoming available to bewilder anyone who feels the need to access their psyches. But most of the action in Guitar Craft is personal.

Most of the public action of a public performer is impersonal, yet intimate. This is the confusion: I feel touched in my core by what a performer has played, and I *know* there is truly an intimacy that I share with them. But they don't know me, probably don't want to know me, and I don't know them. What to do? Where this question impinges upon my own professional life, there follow an astonishing number of reactions, encounters, attacks, enquiries and outbursts of the outraged; frequently where I have declined to be sucked into that confusion. I don't confuse what is personal with what is impersonal, and decline to be manipulated into accepting that it is.

I have attempted replying & responding to expressions of interest, in various ways, for over three decades. Some of these replies & responses are public and many are private, although some have been publicly reported (even where this is a clear violation of the courtesy reasonably implied in private exchanges). Also, I remember many of the specific encounters which gave rise to the "my terrible experience with that awful Fripp and all I did was demand his full time and attention just before he went on / off stage and I wasn't even very drunk / high, well not much, anyway and why doesn't he reply to my heartfelt letter – I only wanted him to listen to my demo tape and sign me to DGM, which is fair because I bought LTIA in 1973" postings. I note that these postings usually manage to omit reporting one significant factor in the exchange; and where the reportage is fairly accurate, what is there & available to be seen is usually impressively missed. But this is a value of ET: it provides raw data on how to

passionately live a life not quite worth living, while attributing blame for life's disappointments to someone else.

I would be surprised if the responsive strategies that I adopt & have adopted would necessarily be appropriate for others, such as BB King and Junior Wells (to name only two artists, both deserving of respect). If we apply the converse, it is reasonable to assume that strategies adopted by BB King and Junior Wells might not be appropriate for Fripp, that rude ungrateful nasty man. Hurt Brat in ET351, however, implies the contrary...

Hurt Brat Tue, 18 Feb 1997 18:41:59 -0500

Subject: Closure

"I'm fortunate because I think if it hadn't been for the older musicians taking-up so much time with me, I don't think I'd probably be here today."

- Junior Wells

"I got to meet B.B. King when I was 15 years old. He was just so nice. He actually sat and talked with me. He was so genuine, so very encouraging to me at such a young age. He didn't know me. And he gave me a pick! I've still got that pick...I keep it to remind me of respect and being good to your fans." - Anton Funderburgh

RF: I share Mr. Brat's concern for young players. My own approach in addressing my perceived responsibilities towards young players is Guitar Craft. For this I gave up my career between 1985-90, and large amounts of it since (none of which I regret).

I do *not* give away my picks, although at the Red Lion House we did buy up the entire supply of German manufacturer Gunther Dick's triangular picks. It has since been dispersed within the GC Team, and we continue to attempt to obtain a comparable supply.

Key principles, instructions and insights that emerged during the early GC courses became codified & collected together in a series of aphorisms. A selection of these was published as a poster in 1987 as "Guitar Monograph No. 3" and has been out of print since. Some of the aphorisms were specific to the conditions of time, place & person. Others have been found useful in the longer period, and continue to be used today. The global aphorism of Guitar Craft, which contains all the others, is this:

Honour necessity.

Honour sufficiency.

Where any aphorism addresses or points towards what is "true" in some way, this "truth" has almost inevitably already been said somewhere, at some time, by someone else. So, any "truth" may be found in one form or another in the writings, literature, practices and oral transmission of all bona fide crafts, ways & traditions. This is irrelevant: what is true, and what is real, is necessarily to be "made" true & realised through the ongoing & creative process of living our lives, whatever our chosen field. Rediscovery and recreation *is* discovery and creation, where we engage and make this our own.

I hope Guitar Craft is able to benefit from the work of others: this validates their efforts & honours their lives, even if they were without recognition in their own time. I hope others are able

to benefit from the work of Guitar Craft, and King Crimson, and DGM: if our work has value for others, then it acquires greater value for us as well.

In any situation where I need guidance, there is a GC aphorism to indicate the direction. In the darkest days of Endless Grief, with despair a frequent visitor & hopelessness a lodger, I would turn to the aphorisms for help.

Begin with the possible, and move gradually towards the impossible.

So, what is possible? Life is too hard to do anything today? Fine. Don't do anything today. Just get out of bed. Out of bed? Fine. Do nothing. And while you're doing nothing, write a letter to your solicitor...

Turn a seeming disadvantage to your advantage.

The greater the seeming disadvantage, the greater the possible advantage.

Without the collapse of EG, there would have been no DGM, no archive releases, no Collectors' Club, no partnership with David Singleton. There was nothing automatic about any of this: the disadvantage *had* to be turned around. But, without the possible total collapse of my professional life & its impact on my personal solvency, I would not have begun the second half of my professional life with the drive, commitment & energy with which I began the first half, at the age of twenty one.

Life is often desperate, but never hopeless.

One of the two worst events of the Endless Grief period was that my personal voice fell silent. This is the voice that has spoken many of the aphorisms, and that part of myself to which I address questions.

We bring to the aphorisms the extent of our understanding: what we see in them is ourselves. If they are to speak to us, the contact is direct. Perhaps this follows a period, even a long period, of reflection; or actively testing them in some practical activity. But to see them, the seeing is direct, unmediated, without explanation. Then, they become ours; and, we become available to them. They defy analysis by the whirring mechanism of our everyday cerebral processing, the rattling association of verbal-intellectual mind. If we might ascribe intent to the "author" of the aphorisms, then part of that intent is surely to shake off the hold of habitual thinking.

Guitar Craft is a work in process. If anyone wishes to use, or adopt, the Guitar Craft aphorisms they do so with my good wishes (subject to the warning which follows below). The aphorisms are not presented as authoritative, although I recognise in some of them an authority which is not my own. An aphorism, or several aphorisms, may also be publicly quoted and/or used on notepaper and websites with due acknowledgement. They may not be used in toto, or in bulk, without express permission. They may not be used commercially. They may, for example, be printed up on a t-shirt for private use, but not for sale. If anyone is in doubt about any of this, or has a question, they can find the answer somewhere in the aphorisms. That's what they are for, after all.

Now, a warning to the gullible from Hurt Brat, a possessor of the Social Gland & friend of Matt the Tri-Cranial. HB precedes this with an encouragement to practice detachment, and testifies to its efficacy...

HB: Tue, 18 Feb 1997 18:41:59 -0500

Subject: Closure

Unfortunately, we live in a world where more often than not, and owing to a seemingly global inability/unwillingness to praise/compliment one another, we feel as though we are 'between criticisms'. People experience this degrading reality everywhere: from their employers, from the clergy, from family, from people they try very hard to respect. As such, many of us are left to our own devices, adrift in a whirlpool of hope, possibility, and disappointment. It is no surprise that a great many more Americans are actively participating in alternative spiritualities and Zen today than ever before (What religion does not include sound and rhythm?). Detachedness works.

RF: Bret then moves, from this worthy call to stillness in the midst of life, to penetrating the nothingness which lies at the heart of Guitar Craft aphorisms with his incisive, rapier wit honed by detachedness; & mocks the implied assumption (acknowledged and undefended) of the Guitar Craft instructor who pinned these aphorisms to the notice board at a Guitar Craft course in Gandara, Buenos Aires province, on November 1st. 1996...

HB: Wed, 19 Feb 1997 02:53:46 -0500

Subject: Hook, Line, and Sinker

Dear ET'ers and Mr. Fripp-

Good heavens! This is splendid. Full-Gainer w/ a Twist!....

*...and we quote...then denote,

"XIII

Expectation closes our ears to what is happening in the moment.

[THIS FAN IS GOING TO MAKE ME SUFFER. (2 months later..."Y'mean that loser who looked like, mebbe, he had 'head lice' was BRIAN WILSON??!?"]

Listening is how we eat music.

[MMM, YUMMY!...WAIT A MINUTE! YUCK!...THIS TASTES LIKE SOMETHING I MIGHT, PHILOSOPHICALLY, NEED TO ACTUALLY <underline>HEAR</underline> IN ORDER TO COMPREHEND ENOUGH NOT TO APPEAR EFFETE AND CONDESCENDING ON THE WEB...]

Hearing is how we digest it.

[I'M SORRY, AFTER I LISTENED TO MY EXPECTATION, I COULD HEAR NOTHING.]

Hearing transforms sound into music.

[GROUND CONTROL TO PILOT....CIRCLE BACK!...CIRCLE BACK!!!]

Listening is a craft.

[HEY..Y'GOT A NICE PLACE HERE...ANYTHING IN THE 'FRIDGE?]

Hearing is an art.

[ummm... <underline> PPPPPPHHHHHFFFFTTTTTT</underline>!!!!!!
WHAT'S THAT SMELL?!?]

Listening changes the performance to which we are listening.

[AFTER I LISTENED TO MY EXPECTATION, I COULD HEAR NOTHING.]

Music changes when people hear it.

[How? If the "MUSICK'ERS" can't hear The Hearers?]

What we hear is the quality of our listening.

[ibid.]

Our understanding changes what is is that we understand.

"is is" [?]

Silence is the field of creative musical intelligence which dwells in the space between the notes, and holds them in place.

[(essentially) paraphrasing J. Cage, or C. Nancarrow, or Fred Frith, or Harry Partch, or...]

Silence is a bridge between worlds.

[ibid.; include Buddha and Lao Tzu, and Carlos Casteneda, and Sen. Joe McCarthy, and Terrance McKenna, and...]

The science is in knowing, the art is in perceiving.

[AFTER I LISTENED TO MY EXPECTATION, I <underline>WOULD</underline> HEAR NOTHING.]

The future is what the present can bear.

[NO SHITTIN'!]

The way we describe our world shows how we think of our world.

[YES.]

How we think of our world governs how we interpret our world.

[YES.]

How we interpret our world directs how we participate in it.

[NO SHITTIN'!]

How we participate in the world shapes the world.

[AT THE VERY LEAST, THE WORLD TO WHICH WE ARE, SOCIALLY, CONNECTED.]

The presence of absence is an entry into loss.

[BUT...SOME ABSENCES ARE *BENEATH NOTICE*!
<underline>I'M</underline> TELLIN' YA, DOG-GONE'IT!]

Things are not as bad as they seem.

[THINGS ARE EXACTLY AS BAD AS THEY SEEM.]

They are worse than that.

[RIGHT.]

They are also better than that."

[COULD BE, AND HOPE SO. THE DOOR'S OPEN.]

(My Mr. Fripp-ian, "OUCH! MAAAAAAAAAAAAAN!!!!!! THAT SUUUCCCKKKED!!!!", -style response/aim parody is 100% m'thang. Writ it on purpuss..no sheeit. (I mean, if Mr. Fripp can dish it out, certainly, he's got his "catcher's mitt" on.) Only the proper quantity of 'twang'—as defined by Mr. Fripp's ("When I Fart, Only Dogs Can Hear It") spirited, though very insultingly out-of-contextualized (people who aren't dopey notice these things.....some "ET" members, judging from things I've received, are not dopey), A-didactification of my, and A. Swansorb.'s (today's "ET") postings—has been channelled into this 'un.) Buh'bye. (Sheesh! Now I've got me back into this.)

RF: What is the sound of one mind flapping?

A professional journalist, in a book of his published during the 1990s, compared some of the aphorisms to the advice found in fortune cookies. Regrettably, I note (and this is clearly a comment on myself, and not the writer) that I have found more insight in fortune cookies than in his book. Perhaps I've been eating the wrong kind of fortune cookies.

Here is a list of the current aphorisms, edited and compiled for this particular day, for those who wish to engage in the spirit of critical goodwill...

Guitar Craft Aphorisms

Honour necessity.

*

A beginning is invisible.

Accept nothing less than what is right.
A completion is a new beginning.

Act always in accordance with conscience.

Act from principle.
Move from intention.

Act with courtesy.
Otherwise, be polite.

A decision changes the world.

A function of language is to disclose.
An effect is to reveal.

A mistake is always forgivable, rarely excusable and never acceptable.

An artist acts with the assumption of innocence within a field of experience.

An end may be a finish, a conclusion or a completion.

Answers will come through the guitar.

Any fool can play something difficult.

Anything within a performance is significant, whether intentional or not.

A principle is an instruction in qualitative endeavour.

A principle is universal.

A rule is specific.

A law is invariable.

Artistry repeats the unrepeatable.

Assume the virtue.

Before we do something, we do nothing.

Before we move from A to B, better to know we're at A.

Begin with the possible and move gradually towards the impossible.

Being a slob is hard labour.

Being is a measure of our coherence.

Better to be present with a bad note than absent from a good note.

Be very careful about the beginning.

Then, be very careful about the end.

Then, be very careful about the middle.

Change one small part and the whole is changed.

Commitments are to be honoured.

Conscience is utterly impersonal.

Craft is a universal language.

Craft maintains skill.

Discipline maintains craft.

Craft follows the tradition.

Discipline maintains the tradition.

Music creates the tradition.

Creative work is serious play.

Define the aim simply, clearly, briefly, positively

Discard the superfluous.

Discharge one small task superbly.

Discipline is a vehicle for joy.

Discipline is not an end in itself, only a means to an end.

Distrust those who profess altruism.

Distrust anyone who wants to teach you something.

Don't be helpful: be available.

.

Each part does the work of that part, and no other.

Establish the principle.

Even genius requires a competent technique.

Everything we are is revealed in our playing.

Expectation is a prison.

Expect nothing.

Good habit is necessary, bad habit is inevitable.

Health is a measure of our wholeness.

Hearing transforms sound into music.

Helpful people are a nuisance.

How we hold our pick is how we organise our life.

If a quality is present, it is clearly recognisable and may be named.

If in doubt, consult tradition.

If still in doubt, consult your experience.

If still in doubt, consult your body.

If we can ask our body to do nothing for half an hour, perhaps we can ask our body to do something for half an hour.

If we can define our aim, we are halfway to achieving it.

If we don't know where we're going, we'll probably get there.

In popular culture, the musician calls on the highest part in all of us.
In mass culture, the musician addresses the lower parts of what we are.

In popular culture, our musicians sing to us in our own voice.
In mass culture they shout what we want to hear.

Intentional action generates intentional results and unforeseeable repercussions.
Unintentional action generates unintended consequences and inevitable repercussions.

Intentional poverty is fine.
Unintentional poverty is wretched.

In the creative act, the Creation continues.

In the creative leap, history waits outside.

In tuning a note we are tuning ourselves.

It is difficult to exaggerate the power of habit.

It is not necessary to be cheerful.
It is not necessary to feel cheerful.
But look cheerful.

Just below the surface of our everyday world lie riches.

Let us find clean and cheerful friends.

Life is often desperate, but never hopeless.

Life is too short to take on the unnecessary.

Listening changes what we are listening to.

Listening is a craft.
Hearing is an art.

Listening is how we eat music.
Hearing is how we digest it.

Mastery acts on what is below.
Artistry submits to what is above.

May we have the clarity to see our work, the courage to embrace it, and the capacity to discharge it.

May we trust the inexpressible benevolence of the creative impulse.

Money is not a problem, only a difficulty.

Music changes when people hear it.

Music is a benevolent presence constantly and readily available to all.

Music is a quality, organised in sound and in time.

Music is silence, singing.

Music is the architecture of silence.

Music is the cup which holds the wine of silence.

Sound is that cup, but empty.

Noise is that cup, but broken.

Music so wishes to be heard that it calls on some to give it voice and some to give it ears.

Necessary repercussions are possible.

Inevitable repercussions are expensive.

Unnecessary repercussions are dangerous.

Necessity is a measure of aim.

Necessity is never far from what is real.

Nothing is compulsory, but some things are necessary.

Nothing worthwhile is achieved suddenly.

Offer no violence.

Perfection is impossible.

But I may choose to serve perfection.

Performance is impersonal yet intimate.

Performance is inherently unlikely.

Playing fast is easier than playing slow.

Quiet is the absence of sound, silence the presence of silence.

Relaxation is necessary tension.
Tension is unnecessary tension.

Relaxation is never accidental.

Rely on what someone does, not what they claim to do.

Remain in hell without despair.

Right action moves from principle.

Rightness is its own necessity.

Signposts are useful when you know where you're going.

Silence is a bridge between worlds.

Silence is a distant echo of the approach of the Muse.

Silence is an invisible glue.

Silence is not silent.

Silence is the field of creative musical intelligence that dwells in the space between the notes, and holds them in place.

Small additional increments are transformative.

Sometimes God hides.

Suffer cheerfully.

Suffering is necessary, unnecessary or voluntary.

Suffering is our experience of the distance between what we are and who we wish to become.

Suffering of quality is invisible to others.

The act of music *is* the music.

The audience is mother to the music.

The concern of the musician is music.
The concern of the professional musician is business.

The creative impulse animates whatever instrument is placed at its disposal.

The end is a finish, a conclusion or a completion.

The future is what the present can bear.

The highest quality of attention we may give is love.

The mind leads the hands.

The musician and audience are parents to the music.

The musician has three disciplines: the disciplines of the hands, the head and the heart.

The necessary is possible.

The optional is expensive.

The unnecessary is unlikely.

The only contribution we make is the quality of our work.

The performer can hide nothing, even the attempt to hide.

The presence of absence is an entry into loss.

The problem with knowing what we want is we just might get it.

The quality of a person is revealed in their conduct in front of sex, money and the use of time.

The quality of the question determines the quality of the answer.

The question is its answer.

There are few things as convincing as death to remind us of the quality with which we live our life.

There are no mistakes, save one: the failure to learn from a mistake.

There are three kinds of repercussions: the necessary, the unnecessary and the inevitable.

There is only one musician, in many bodies.

There's more to hearing than meets the ear.

The science is in knowing, the art in perceiving.

The simplest is the most difficult to discharge superbly.

The way we describe our world shows how we think of our world.

How we think of our world governs how we interpret our world.
How we interpret our world directs how we participate in the world.
How we participate in the world shapes the world.

The work of one supports the work of all.

Things are not as bad as they seem.
They are worse than that.
They are also better than that.

Trust music.

Turn a seeming disadvantage to your advantage.
The greater the seeming disadvantage, the greater the possible advantage.

Understanding changes what we understand.

Understanding is simple. Knowing is complicated.
We are held responsible for our actions, whether intentional or not.

We begin again, constantly.

We begin by doing nothing.
Then, we move to doing something.

We begin where we are.

We can do whatever we like, providing we can pay the bill.

We can't go far on enthusiasm, but we don't go far without it.

We have the right to choose our form of suffering.

We have three rights:
the right to work, the right to pay to work, and the right to
suffer the consequences of our work.

We have three obligations:
the obligation to work, the obligation to pay to work, and the obligation to suffer the
consequences of our work.

We know others to the extent that we know ourselves.

Welcome the unexpected, but not the arbitrary.

We'll never get rich by hard work.
But, we'll never get rich without it.

We may understand our knowing, but we can't know our understanding.

We may not have an equality of talent.
We may not have an equality of experience.
But we may be equal in aspiration.
We can be equal in commitment.

We must be able to play in our sleep.
Because usually we do.

We only have what we give away.

We pay our own tab.

We perceive our perceptions.

We recognise in others what we know most deeply in ourselves.

What is right accords with principle.

What we hear is the quality of our listening.

What we hear is the way that we hear.

When we have nothing to say, it is very hard to say nothing.
When we have nothing to do, it is very hard to do nothing.

Where we're going is how we get there.
If where we're going is how we get there, we are already where we're going.

With commitment, all the rules change.

With craft the musician can copy something old.
With discipline the musician may copy something new.

*

Honour sufficiency.

January 21st. 2001

20.49 Comments on the day's work over dinner. Questions for Fernando on the top table, also for myself.

22.27 Full house of guitars with inner & outer circles. Circulating patterns & an eruptile

thrakking in 5, 7 & 11 which continues.

Monday 22nd. January, 2000;

07.18

A symphony of plumbing: beginning around 06.00 and moving to mezzo forte an hour later.

11.19 It took 15 minutes for 15 reasonably intelligent, well-educated adults from the liberal democracies to play a G major scale into 3 octaves.

Then it took 25 minutes for about 33 people from the Level One to not quite be able to play single notes consecutively in C major for 4 bars of 4. The Level One has divided into 2 groups to work on this with Martin & Luciano, for as long as Martin & Luciano can bear. Personal meetings with Martin, Luciano, Guillermo & Fernando are becoming available. Fernando is responsible for helping students practice contorting their faces while playing.

Monday 22nd. January, 2001;

12.29

The creative impulse *will* create. It has to: this is its necessity. The creative impulse is unconditioned: it can only be expressed through a vehicle, through forms, through constructs. Rain falls downwards: this is inevitable; this is beyond our control. But we can provide channels to direct the water. The concern of the musician is the construction of appropriate and necessary forms for music to flow into the world.

18.46 The Level Two are attempting the impossible: a G major scale moving up an octave, then beginning on the scale step below. The Level Two are attempting the impossible: counting as far as 10 bars of 7 and 14 bars of 5.

That life could be this good all the time.

20.48 Fernando took questions at the top table over dinner, and so did Hernan. The question for Hernan was "How do you approach the Hell Boy aphorism – honour convenience?"

Answer: "Look busy. Do nothing".

Then, suddenly, silence visited and enveloped the dining room. After 30 minutes it lifted, and all course's noise returned, equal suddenly. A stunning dessert – apple crepe with whipped cream – was served amidst the din.

Tuesday 23rd. January, 2002;

07.10

After dinner yesterday evening: for those who have not yet developed their own practice, an introduction to the relaxation and sitting technique which is recommended in Guitar Craft

08.48 A discussion over breakfast with someone relatively new to GC, following their comment earlier in the week on phenomenology – their idea in GC that music is already there before it is composed. Their question over breakfast – if it isn't played where does it go? Answer: nowhere. It stays where it is, in potential; in "eternity" rather than entering our time sequential stream. This implies there is a kind of time which bridges the two – a creative time or intentional which brings what is potential into actuality.

Now, a pile of personal meetings for me today with the Kitchen Team & Level Two.

10.58 The meeting with the Level One found it difficult to count beyond one bar of four, so we moved onto cross picking.

18.42 For lunch today we were served orange squerd.

Those who lived at the Red Lion House, or have been on any longer GC course, know what squerd is. Squerd is an indefinable mass of varying viscosity and fluidity that you know is most likely good for you. It is impossible to determine what its ingredients are, or were, prior to them becoming squerd. Very mobile squerd is served in a bowl, as if it were soup. Squerd of greater tensile strength is served on a plate. There is a considerable degree of ambiguity between the two. Squerd in a bowl may often be eaten with a fork, for example, and squerd on a plate may often be eaten with a spoon. A knife is unnecessary when squerd is served.

Some squerd is green. One member of the Kitchen Team asked if there are other colours of squerd. Some squerd is not quite orange, and tends towards brown. Some squerd is not quite green and tends towards grey. So, there is a third colour of squerd which is somewhere between green and orange.

Squerd is also sometimes a dessert. Then, we are not as confident that it is good for us, but it tastes better. Some dessert squerd of the third colour inclines more towards the red, but rarely becomes recognisably so.

21.23 Several good questions over dinner, directed towards Fernando, Hernan & myself. Anyone on the top table is available to be asked questions. Otherwise, they must be prepared to tell a joke. Anyone at the table, other than a visiting guest, is on call.

A discussion of the day between Hernan & myself is the possibility of buying a GC house in Germany. No one person has enough cash, so we are considering the possibility of forming a consortium. Probably, this venture would need input from America.

Hernan has booked this building for a six-week Guitar Circling project during the Summer, beginning on August 10th.

Four more personal meetings after dinner & now we have a group meeting for all the guitarists in the house that would like to attend.

22.43 Interesting circulations so feebly undertaken that I abandoned them. We moved on to Boogaloogachogling and then to a sonic pleroma.

Wednesday 24th. January, 2001;

07.18

Today is The Parade of Hands.

08.49 "Discipline & The Act Of Music": what better place to reflect upon this than a Guitar Craft course?

The insight I was granted last Friday continues to percolate and resonate, and I'm beginning to have a sense of some of its implications. Briefly, and essentially, the insight is the basis for the talk. Rather than sift through a mass of the available information which is already in draft, I have been given something that I may present with my own voice. This has the connection which accompanies parents & their children. The children don't belong to us, but we have a responsibility to them. And then, having done the best we can to bring them into the world, and prepare them, we send them into the outside world with our love; and let them find their own way. Our responsibility is to bring them into the world, and to let them go. We can't, and shouldn't, control the direction they take.

This is the work of any person working in a creative way: to construct a vehicle that becomes a bridge between the available qualitative, and the possible quantitative. The repercussions of that are beyond us. But if we act rightly, we will be able to manage those repercussions.

13.37 At lunch The Hernan Nunez String Quintet, formed and directed by Marcello, played a Marcello piece. Maude sung, a cappella, Steve Ball's "Green Thumb".

Tom Redmond introduced a new performance ensemble: Project H. This might be described as an orchestral version of the Hell Boys' Greatest Hit: "The Chord From Hell". Gaucho aphorisms were invited to describe this performance. Suggestions included:

They may be ugly.
But they sound like shit.

Project H will soothe your itching.

Life is often desperate and always hopeless.

The adoption of incompetence in a field of ignorance.

Wednesday 24th. January, 2001;

23.30

Dessert at dinnertime defeated me: this is a rare accomplishment. Hernan offered me a second "spare" dessert that I declined, full of the first glutinous pudding. Hernan suggested a new Gaucho aphorism:

When you're stuffed, eat some more.

A long Q&A with Level One with L2 & KT in attendance. Then, a performance challenge for Level One, with performance groups selected by The Hat. The Hat makes wonderful choices. All the students write their name on a piece of paper which is then put into The Hat. Often in Europe this is the hat worn by David Bowie on his European "Serious Moonlight" tour, which was given to Hernan Nunez, security person on the tour. This evening the hat was Hernan's but lacked the provenance. It also came with earflaps.

Thursday 25th. January, 2001;

09.03

Some of the Level One were working until 05.00 this morning. A solo performer went to bed at 02.00 and woke at 04.00, wide awake.

16.39 The Level One groups are practising for their performance this evening. My own day has had many personal meetings with the Level Two & Kitchen Team, and in spare moments the lecture hovers.

20.33 Another stunning dessert. And another Gaucho aphorism from Hernan, following the Berlin Guitar Ensemble's performance at dinner:

We have a lot of tunes.
And they all sound the same.

22.32 The Level One groups performed honourably in front of an audience determined to outperform the performers. Beans flew, also a toilet roll or two.

Now, I am awaiting a meeting of The Consortium, to discuss the possibilities & circumstances of buying a house for Guitar Craft in Germany, and also in New Jersey.

Friday 26th. January, 2001;

07.15

The sky is grey & overcast, but last night's gale has subsided.

The Consortium meeting considered that the best option was to focus on finding a GC house in Germany before acquiring a property in NJ.

12.16 Meetings this morning:

A short meeting with the Kitchen Team at 09.15.

The Level Two to address their tasks for the day.

The Level One for comments on their performance yesterday evening, and their task for the day.

In between, Hernan took several of the staff into the 16th. century cloisters and church, which are the heart of this complex. This 1940s addition we use is built on to that glory, with a 1960s extension to this, as if it were an encrusted wart.

The church has a picture of angels miraculously transporting the house (convent) of St. Loretto. This refers to an historical event: 800 years ago when the convent was threatened by a Muslim army. According to legend, miraculously the house was transported to some 40 miles from here. A recent architectural investigation by the Catholic church has established that the house could not have been constructed from this region.

14.26 Many performances over lunch. The following was posted on the board at lunchtime. It is a précis of a draft of a working document, but appropriate at this time for these people in this place.

Discipline & The Act Of Music.

- i May we trust the inexpressible benevolence of the creative impulse.
- ii A key injunction of discipline is to act always in accordance with time, place and person.

0

Prolegomena

The benevolence of the creative impulse

i Just below the surface of our everyday world lie riches. But our everyday perceptions miss what is available. The inexpressible benevolence of the creative impulse is simply and readily available to all. Music so wishes to be heard that it sometimes calls on unlikely characters to give it voice, and ears.

ii Sometimes, music leans over and takes us into its confidence. When we have known this for ourselves, our lives are never quite the same again. When angels descend from the heavens on chariots of fire and blow trumpets of gold in our ears, our lives can never be the same again.

iii The question for the aspirant musician becomes: how may this happen again? This is a beginning. Discipline is how we continue to call on music, through many long & quiet years when it appears to have deserted us.

iv Discipline is also how we keep ourselves alert for when music might visit once more. We never know when our Friend might call. This visit is outside our control or volition: this is in the gift of our Friend. What is possible, is to prepare a welcome.

v Discipline is also how we do nothing.

vi Discipline is a way of life; that is, a way of living. Music is a way of living: are we in time and in harmony with ourselves, and others?

The act of music is the music.

vii Music is a quality organised in sound and in time. The quality is eternal. The forms of organisation are governed by time, place and person.

We consider three kinds of time: time's arrow, or sequential time; time's cycle, of periodicity and recurrence; and a particular kind of time where intention is involved: we may think of this last kind of time as "creative time".

In the world of creative time, when a decision is taken, the action has already taken place. In the world of sequential time, we experience this as the future leaning back and pulling a succession of events towards the outcome. The distance between the two – the taking of the decision, and the unfolding sequence of events which lead towards the realisation of that decision – involves all three kinds of time. Our engagement in this process is maintained by discipline.

So, another way of looking at discipline is to say that it confers effectuality through time. This is experienced subjectively as an expansion of our present moment. A present moment is a moment of presence.

So, we can say that discipline addresses:

the duration in linear time of our awareness;
our sense of personal presence;
how to expand our present moment in order to address specific and practical tasks
which require extended periods of linear to unfold;

and that this action takes place within society and community.

I

My Life In The Act Of Music

i This suggests there are alternative futures available to us:

One is the future which is provided by the conditions of our lives – the conditions determined by where we are born, when we are born, and to whom we are born. These conditions are genetic, cultural, historical and, some would say, astrological.

Another future is the future which is possible for us. This is the future which is uniquely available to who we are. This possible future is one we are born to discover and then create for ourselves.

The degree to which we are able to achieve this is significantly determined by the degree to which we acquire discipline.

ii It is not possible for the musician to play music.
But, it is possible that the musician is played by music.

We may not be able to govern the weather, but it is possible that we push the boat onto the lake & raise the sail. The wind may not blow, but if it does, we are ready and available.

The aim of the musician is to create a construct through which music may enter our world.

II The Three Disciplines

i The musician has three instruments: the hands, the head and the heart.

A prime aim of discipline is to co-ordinate and harmonise the functioning of these three instruments.

Three words describe the functioning of the hands, the head and the heart: doing, thinking, feeling.

In musical vernacular, these three areas are often simply referred to as technique, ideas, feel.

ii The three instruments are necessary in making judgements. Where the senses fail to render a decision – it looks ok, smells ok, but is it ok? Or an argument is persuasive, or not; the feelings can judge: this *feels* right, or not.

III Process

i Discipline is also a process.

Discipline is “acquired” in a series of stages. With experience, we begin to recognise the discrete quality of each of these stages. There are three stages: the beginning, the middle & the end. Each stage has itself three steps: the beginning, the middle and the end. This provides nine points in any complete process where qualitative shifts occur.

That is, if the process is to continue on course. If these qualitative shifts do not take place, at best, the undertaking continues on a flat plateau until the nominal aim is achieved. This is an end, rather than a completion. Less successful processes unwind, or continue but in the opposite direction to the original course.

There are three endings to a process:

A finish, where something is lost;
A conclusion, where nothing is lost;
A completion is a new beginning.

ii The process of acquiring discipline is a movement from mechanical activity to intentional action. The process of discipline aims to:

1. Co-ordinate the functions – the three kinds of doing – the hands, the head & the heart: this is sometimes called “the harmonisation of functioning”;
2. Achieve coherence in the degree & intensity to which we are what we are: that is, our inner togetherness or “being”;
3. Unify our intention: that all of what we do serves the same aim; that we accept direction from central command at our “World HQ”.

We achieve this separation by practising the discipline of each of the functions, their co-ordination, and then their harmonisation.

Through applying ourselves to this practising, we generate energy.

Through the energy made available, we may be able to put some of it in the bank. This “saved currency” is then available for future investment.

iii stages & steps

The three stages of any discipline are these: injunction, application, and verification.

We begin where we are, and unfix our moment by doing nothing, and watching while we do nothing.

We move on from where we are, through introducing flexibility to our functioning by letting go of “bad habits” and acquiring “good habits”.

We become where we are by doing something with efficiency and becoming someone who is efficient.

Then, we begin again.

- | | |
|-----|--------------------------------|
| 0 | We begin where we are |
| 1 | Doing nothing |
| 2 | Watching while doing nothing |
| | |
| 3 | We move on from where we are |
| 4 | Letting go of “bad habits” |
| 5 | Acquiring “good habits” |
| | |
| 6 | Becoming where we are |
| 7 | Doing something efficient |
| 8 | Being someone who is efficient |
| | |
| 9/0 | Being where we are |

When we arrive at where we are, as if for the first time, we begin to “hang together”, or to cohere. We are beginning to be our own person.

But who we are can get in the way. So, beginning again, we recognise that by holding on to who we are, to being something, this gets in the way of music on download. So, we let go of who we are and begin again. At a particular point in a mature life process, this confers:

Flexibility;
Presence;
Engagement;
Separation;
Judgement;
Spontaneity.

The degree to which this may be so is governed by our ability to bear suffering.

15.18 These two following comments are from postings to the Guestbook following the GC course last year in Gandara, Argentina...

John Morton (LonCayeway@Hotmail.com) 07-Apr-2000 20:18 GMT
Canada

One quickly gains a sense of how demanding this type of course must be on the participants, and how rewarding the outcome can be. Work upon oneself of this sort is often the most difficult task one can ever accomplish: it can seem to be exhaustingly energy-intensive. Since it takes about six months for central nervous system cells to physically conform to the new pathways such training creates, this sort of self-development is initially stabilized solely by new assemblages of electrical potentiation that are cultivated within the nervous system...and that can appear to take a lot of internal energy to produce, support, and maintain!

Thus, such work can seem to be exhausting, even though this sensation of exhaustion is primarily just a feeling associated with, and not directly caused by, the production of new neural pathways. One is not so much dealing with an actual lack of available energy here but rather, with the transient unavailability of the customary sensations of ease associated with the efficiencies of established neural pathways. And it is often difficult to separate this sensation of exhaustion from our normal mechanical responses toward actual physical exhaustion. This is because actual physical exhaustion interferes with the normal function of nerve cells; and the body's responses to the sensation of this situation can be mechanically triggered when habitual neural pathways are not being used due to a lot of new associational pathways are being formed.

(It can be helpful to realize this; and also to further differentiate between the difficulties of this process and the achievements attained through such processes. That way in the future, when these new achievements are employed to overcome very different obstacles, those new obstacles won't be re-inforced through a conceptual association to the sensation of exhaustion encountered in obtaining these achievements).

When dealing with such a sensation of exhaustion, it is often helpful to gather one's awareness around the core of conscious association related to the processing of sensory input. This can help one to let go of, and not hold on to, this illusory sensation of exhaustion (as difficult as that is!). An important presentation of such a technique can be found in the ancient Chinese treatise, "The Secret of the Golden Flower" (always use the Thomas Cleary translation into English: the Richard Wilhelm translation is hideously inaccurate).

This ancient classic was considered so important that it was openly circulated and accepted by both Buddhist and Taoist schools. But then, the primary purpose of the esoteric secrecy surrounding active schools of self-development has less to do with hiding knowledge than it has to do with creating an environment in which the work of those inside can occur without interruptions, or disruptive influences. Thus, such schools were often organized within surrounding circles of graduated contact to the outside world, with the outer circles making allowances for the needs of those not working within, but attracted to, the schools.

Douglas Baldwin (dbaldwin@suffolk.lib.ny.us) 07-Apr-2000 19:26 GMT
USA

Two brief stories:

When on the second level one course ever, fifteen years ago, I had a vivid dream-like experience. After being introduced to the circulation, I sensed in my sleep that night a massive energy which whipped through the rooms of the fellow Crafties and returned to my sleeping form, waking me instantly. Having also been introduced to the principles of the left hand, I woke the next morning to find a tiny pimple on my left forearm. The next night, having been introduced to the principles of the right hand, I experienced the same whip-like energy, but circulating in the opposite direction. I awoke with an identical pimple on my right arm.

As I was reading the diary entry regarding the "It's a sign!" story, my internet connection suddenly shut off. It was a sign, I'm sure.

18.25 The Level One presented their day's work of applying one small piece of quality.

23.01 Dinner featured specialty Neapolitan pizza, chef Massimo the Triumphant, with tiramisu for dessert – another dinner time success story featuring Allesandro the Good.

The Level One came together for their final meeting, with other house members present, at 21.00. Several of the team presented comments on their course. The Level One was formally declared completed at 22.13.

Level Two met shortly afterwards to take a decision on how to approach an exercise which is hovering, inviting them to take it to a finer, better, more complete completion than managed to achieve by dinner time. This may take them well into the night.

And I am now 75% packed.

Saturday 27th. January, 2001;

07.17

The House was alive already at 06.00. Some of the Level One were leaving for 'bus & train stations, and airports.

I'm continuing to reflect upon the lecture: now, discipline sufficiently considered, I'm onto that part of the talk that falls under the heading of "The Act of Music".

08.40 The energy of the house has moved from focused to disrupted. People are moving about without definition, with shouting, while leaving.

This is where those left behind become vulnerable: the energy envelope of the course is no longer a protecting shield from the normal abnormalities of everyday life: the lack of a sense of personal presence, our careless movement through space, our negative thinking, the throwing of ill-will at people we dislike. All of this has impact. Within a defined and bordered construct such as a GC course, this negativity is (mostly) neutralised.

One of the difficulties from the chair I sit on is to see the power of fantasy in the lives of some of those who come on these courses. The most common illusion is one of "becoming a professional musician". In time, this usually evaporates: several years in smoky bars to hostile audiences undermine dreams of the professional life, and places illusion against hard actuality. But for some, this youthful illusion becomes deeply held fantasy - perhaps they deserve public recognition of their unique personal genius – and this fantasy becomes fixed in their centre. I look at them, and see that all they have in their lives depends on this fantasy, and that without it there is little else to keep them going. I know how hard life can be; when despair is our only companion. I hesitate before shattering their fantasy. In the past, on one particular occasion, I was very direct. Today, I shall say nothing. There is little more I can do without deconstructing a life.

10.58 Several very good comments made by the team during the Level Two final meeting. The Level Two was declared formally completed at 10.53.

13.39 Hernan & I drove into the small town of Sassoferrato, saw the small open-air amphitheatre where the visiting students in the Summer have been invited to make a performance. Then we went for cappuccini & cakes, caught up with each other, and discussed a possible overview of Guitar Craft's mid-term future.

Hernan mentioned that a German guitarist who has been on several courses advertises his performances as "student of Robert Fripp – of King Crimson – and Guitar Craft". This is easy: anyone whose professional life refers to myself or Guitar Craft in these terms is not someone I regard as a student, nor do I regard them as a Crafty. A Crafty is someone whose life is based on the principles and injunctions of Guitar Craft, not one who trumpets the connection to further their career.

There is a guitarist in Argentina who had several lessons from me at Randolph House in London during early 1975, when these lessons were presented as "Guitar Mechanics". (This is where I met my pal Matt Seattle, when Matt was a guitar player). The Argentinean returned to Buenos Aires and taught the "Fripp Method" with "The Four Hundred Exercises" complete with stories of hanging with his pal Boppin' Bobby. Fernando Kabusacki & Hernan had lessons with him on this basis. This player based his career on a lie. When Hernan invited me to Argentina with The RF String Quintet, Guitar Craft & King Crimson, the lie was exposed. Now, after many years of seeing the repercussions which unfold from decisions, better that our decisions are true. Whatever we understand by that.

Now, to complete packing & close down lecture drafts in preparation for leaving this house at 15.00 to Ancona airport. Cathy & I are flying to Milan connecting to London Heathrow. I am hoping to see The Little Horse tonight!

Guitar Craft, California

St. Vincent de Paul Circle V Ranch
Santa Barbara, California.

15.36 Ralph Verde, co-registrar with Bill Forth, collected me from The Upham in Santa Barbara at 11.26, 4 minutes ahead of time. We visited a bag shop at the bottom of State Street where I acquired a softcase for this Apple G4, to reinforce its traveling capabilities. The drive here, of around 30 minutes, is through some beautiful landscapes.

A team of experienced Crafties were already here, the Kitchen Team Preparing lunch for 13.30 under Kitchen Supervisor Patrick. Frank Sheldon is also close to double-dating on these two almost back-to-back Guitar Craft courses. Curt Golden, Bill Rieflin, Tony Geballe, Paul Richards, Rob Rushin, Debra Kahan & Bill Forth, all from the early years of Guitar Craft, and many other familiar faces from early courses. Bert Lams has also now arrived and Ralph & Scott, co-facilitators & registrars, shuttle up and down the hill carrying new arrivals.

As I sat at the lunch table, there it was: silence waiting. I am beginning to have a better sense of what comes with silence. I'm not sure who else in the dining room

welcomed silence, or was aware of its presence, but there it was. Nor was it necessary to be quiet, or to stop all activities, for the silence to remain. So, silence is accepting of activity. I was engaged in conversation and, when talking, I lose touch with silence.

The Director's Cabin, for such is the name upon the wooden plaque outside, is set up some 30 yards the hill from the main center of activities & dining room. Suitcase unpacked, bed repositioned, computer on desk, Ovation guitar revibrated. Bill Forth has just popped by to give me a book on Dorset, by Arthur Mee. Arthur lived in Salisbury Close until his death in the 1980s. This volume was first published in June 1939 and reprinted in 1951 (sixth impression). There is a note that the changes wrought during the war have not been included in the reprinting. I add that more damage has been done to Dorset in the past three decades through inappropriate development than the Luftwaffe would have conceived possible.

17.05 The Staff have held their first meeting. Frank & his assistant Sandra (abandoned at Newark Airport on her last journey to Guitar Craft, at Lebanon, NJ), co-registrars Bill & Scott, Mentoring Buddies Curt, Tony, Bert & Paul & Bill, House Manager Tom & Kitchen Supervisor Patrick. This dealt with practicalities such as timetable, the presence of cats in the buildings, which buildings are available for personal & group meetings, the lighting of a fire for morning sitting, the acquisition of lamps, washing & cleaning up, sweeping floors, the use of house shoes.

Silence joined us at the beginning of the meeting.

19.10 Now, a schedule written for the notice board, soon to dinner...

20.55 Silence was present at dinner from the beginning. As I sat on the head table, at 19.38, there it was – silence, waiting. At 20.10 the room became aware of it, or at least accepted it, and fell quiet as silence embraced us. Then, at 20.30 I declared the House Rules, or conditions of the course. It is very hard to interrupt silence and break its moment. Declaration: should these House Rules be unacceptable to anyone, they are entitled to a full refund with their free meal.

21.04 Ralph & James have delivered a table lamp to Director Lodge & the Inaugural Meeting is now set for 21.45. Bill Forth is returning to LA.

23.16 Roaring fire with almost everyone present when I arrived at 22.43. The course, which contained courses within it, was declared underway at 22.48. WE went around the room introducing ourselves and saying who we are, where we come from, what brought us here, and our aim/s for the week. Several of the Team who were involved in the early courses and Red Lion House were asked how their histories of the period are proceeding. Feebly, is the quick answer. Not well, is the longer scenario. I related the story of Hernan's shoe... and presented myself...

What brought me here? Tom Redmond suggested that a course in America was necessary. Hernan also wanted a course for Europe, which was also necessary. So I asked them: which is more important? Both, was Tom's reply. So, that is what brought me here.

What is my aim for the week? I have three:

1. To sense the condition of Guitar Craft & Crafties in North America.
2. To prepare for a project which will begin in the second half of 2006 and last for approximately one year.
3. To respond to the needs of the course and those within it.

The Inaugural Meeting ended at 23.02.

Tuesday 12th. February, 2002; 06.32

Rising at 06.00 to a chilly morn. The water was hot, here in Director Lodge and up the slope from the meeting cabins, but only after a very cold spirtle that brought the animal closer to life.

08.15 A full sitting withy roaring fire: this is a first. Also a first: the posting of the Guitar Craft House Rules on the notice board. These are called at the first meal, prior to the formal & official beginning of a course at the Inaugural Meeting. But, never before printed and posted.

Guitar Craft House Rules

St. Vincent de Paul Circle V Ranch
Santa Barbara, California

Monday 11th. February, 2002

Nothing is compulsory, but some things are necessary.

No judgements are made: we accept you as you arrive.

There is no mistake save one, the failure to learn from a mistake.

Conditions are often uncomfortable, but usually acceptable.

Some people here will irritate you.
Don't worry: you will also be irritating them.

You are not asked to accept any direction that violates conscience.

You are not asked to passively accept any idea that is presented to you.
Rather, you are invited to test ideas you find surprising, to establish the veracity of those ideas, or not, for yourself.

You are encouraged to adopt a position of healthy skepticism, while participating in a spirit of goodwill.

Please stay within the boundary of the facility for the duration of the course.
Manager.

If you require something, please ask the House

Be on the course, to the degree that you are able to honorably bear.
For example, listen to the music generated within the course; telephone when necessary, or when useful.

Drug use is incompatible with participation in Guitar Craft.
Although nothing is compulsory, this is necessary.

If Robert considers that any person's continuing participation is detrimental to either that person, or the course as a whole, Robert may ask that person to leave.

If any of this is unacceptable, you are free to leave with a full refund prior to the beginning of the course.
If you decide to stay, you are asked to stay for the duration of the course.

In part, this is a response to the conduct of Riff Slinger in Italy, he of the many notes when one is probably already too many. But, nothing is compulsory – after all, you don't *have* to get drunk and drive off the road when returning to a Guitar Craft house from playing hooky, after drinking 3 bottles of wine over pizza.

Riff Slinger's loss of the course was a great disappointment. There was a day or two in Sassoferrato when I was hoping we were bringing Riff S into the course. Even, I changed the shape of the Level One to draw him in. But, we accept people as they are: no blame. But to see a basically good character refuse to engage with what is on offer in Guitar Craft is a hard one to witness.

Now, meetings with the Kitchen Team at 08.45, Level Two at 09.15 & Level One at 10.00.

11.31 The Kitchen Team is not of a sufficient size to match the size of the course. So, I have expressed my concern that the KT works hard, but not too hard. One of the Team asked for a definition of "too hard". I offered three in response to the comments of the meeting:

1. Two steps beyond hard, rather than one;
2. When determination becomes "grim determination".
3. When we lose a sense of ourselves.

Patrick Smith, who is God in the kitchen, showed the Kitchen Craft left hand position, the position that protects the left hand when sharp knives are involved.

Debra K. referred to Elizabeth Bennett's subtle form of giving advice. Elizabeth would audibly take a breath when a Guitar Craft circle began its work, suggesting perhaps that the players might like to breathe as well. The Guitar Craft aphorism relevant here is: Breathing is optional. Debra was not sure how many people present knew who Elizabeth was. RF suggested that wherever Guitar Craft goes, Elizabeth is never far away.

The Team are circulating limbs on the hour between 09.00 and 19.00. There is no end to the depth this can go within our lifetime.

Level Two: we began by bringing part of our attention to the soles of the feet; then to the top of the head; then to what is in between. Circulations, with some sequences moving in 4 and over each 5th. seat. In the number of players in the circle, this meant that there were 17 bars of 4 before the sequence began again. No-one had seemed to notice this, so notes appeared as if by surprise rather than having the capacity to be accurately forecast ahead of time. So, this counting was available to visual display in the mind's eye. Listening to our note was also recommended. Also, passing notes with Smiles attached. The faces were particularly grim. At the end of the circulating, we began playing a note three times, passing it on the first. Work for the morning: moving sequentially around the circle in G major through two octaves, beginning on the low G.

Debra, who sat in on all three meetings, is concerned with the question: where is music? By extension, how does music enter our world, and specifically the Guitar Craft world?

Level One: the arrangement of the space settled on an ellipse, along topographical lines. An interesting topology, and not precisely spherical, but functional

nevertheless. Forty students sitting in a room not quite large enough for 40 players in a circle, so the Alexander teachers didn't have enough room to pass behind the chairs. We began by bringing part of the attention to the palm of the hand; then to the back of the hand: then inside the hand; then into the thumb and each of the fingers in turn. Then, to the whole of the right hand.

Next, the exercise was given: choose one note, any note. Do not play this note, choose this note. This one note of your choice may be the first intentional note you have played for a week. When ready, begin. And the Choir of the Single Notes struggled into existence. This Choir was relatively musical, and would have expired after about 4 minutes without prompting and encouragement. Then, we moved to circulating. The first pass was rough of timbre, so the suggestion was made: pass this gift to your friend on the left. Nothing is compulsory, but listening to your note is encouraged. There were difficulties playing sequences of 4 circulating notes moving over the 5th. seat. So, we practiced clapping instead of playing a note, the clapping passing over the 5th. seat. Then, we practiced counting to 4 without passing over a seat. Finally we began to address the functioning of the left hand: fingertips touching & depressing the third string in the 7th. position, noticing how little effort & energy is required to stop the string. The Mentoring Buddies were introduced – Curt, Bert, Paul & Tony – to assist the Level One as they saw necessary & useful.

Leaving, RF asked: if you believed that the future of music entering our world depended upon you alone, would anything change?

14.02 The Level Two at 12.15 successfully completed an ascending & descending G major into two octaves but failed to get through the sequence a second time. Then we moved to contrary motion: G low, F# high, A low, E high, and so on. This was difficult and not yet quite successfully achieved.

If music wished to enter our world, it would require a vehicle. One necessary condition of that vehicle is competence, at least.

Very good comments at lunchtime. Tom Redmond & Tony Geballe joined me on the top table. A feature of sitting at the top table, for those who have not previously been on courses, might appear to be the availability of more food. Actually, one of the features of life on the top table is to be available to questions. So, who had a question for Tom and/or Tony? Following several spurious & good natured questions, the first proper question:

What is the nature of refusal?

And following from this, is a refusal always a stingy act? Can a refusal be generous? This was asked by a newcomer to Guitar Craft, on her first course, and carried with it a sense of both reality & necessity. This was not a question which came from curiosity,

nor mere interest, nor the whirring of cognitive wheels. This was, and is, a real question and continues to return to me.

Several comments on the morning's work were also made, generally very well; that is, based in observation. Several were to do with the choice of an inappropriate note during the opening Choir. What to do with this stinker of a note? How to honour the individual choice while responding also honourably to the overall group? One Level One had chosen a G#. His comments on why were intriguing. I began to present - why? - seven times. This was beginning to lead into deep waters, so I left it there and suggested he might like to take this further in the privacy of his room.

A question was asked by a Level One student: how to distinguish between music that wants to come into this world, and ourselves imposition ourselves on music?

RF: The quick answer is, necessity. If we are unable to make the distinction between musical necessity and our own personal necessity in playing music, then more likely that we will impose ourselves on the music.

At the end of lunch Tom mentioned to me that Joanne, his wife, had suggested he give a year to Guitar Craft. This resonated with my declared aim last night of preparing for a one year project beginning in the second half of 2006.

Lunch was purple squerd, probably a soup although, as with any genuine squerd, its origins are indeterminable Plus a pasty & salad.

Overall, I have a very different sense of this Level One to that in Italy, and several preceding courses. It is as if this team has prepared ahead of time and is now available, ready to go. Drug damage is noticeably much less than has become commonplace on Introductory courses. And what a difference this makes.

Also, the sense that there is a greater reservoir of experience available in the US than Europe, although this available experience is being used less here than the take-up on what is on offer in Europe.

Walked back here, reflections on the first real question of the course.

14.37 Continuing to reflect on the nature of refusal.

14.54 Walking down the hill to claim a cup of tea, overheard from a member of the Kitchen Team: "I am embarrassed to have this guitar in front of me". They were laughing as they said this.

My guitar in hands, ideas are flowing. Now, off to meet the Level One.

16.12 What is the nature of refusal?

17.35 Level One at 15.00 attempted to count to 4 while moving a single note over the fifth chair. Several suggestions were presented by students as to how this might be achieved and several were implemented. None achieved the aim. Then, we moved to address the operation of the right hand. RF is unable to help with this until there is direct experience in the hand: one hour a day for 6 months or four hours a day for 3 months. Until then Mentoring Buddies Tony, Paul, Bert & Curt are available.

At tea-time I sat by Bert & caught up on the CGT, Diane & Tilly, Les the Gardener.

20.14 Level Two meeting at 18.15: circulating in G major, notes chosen by the players. Struck singly, then 3 times, 5 times, 7 times, 11 times, 15 times. Then circulating sequentially in G major through 3 octaves, ascending & descending. Then, in the highest octave. Then adding B above. Then descending through 3 octaves. Then circulating with notes in G major of the players' choice, with multiple strikes. This collapsed, in time for dinner.

The first performances at a mealtime, the first a dismal duo who earnestly sang & strummed. The second – The Hellboys! – with Curt Golden joining Tom Redmond for a startling new piece, based on a real-life incident of September Eleventh, which segued into a Bob Dylan song.

Paul Richards sat at the head table and accepted a series of questions, some not bad at all and mainly practical. Then observations on the afternoon's work, also very good.

The consensus for the evening's work, following suggestions from members of the Level One and Level Two, is that Level One is meeting in the dining room with the Mentoring Buddies, to concentrate on the right hand, and Robert is meeting with the Level Two in the ballroom at 21.15.

Patrick Smith, God in the kitchen, is planning an experiment with the Kitchen Team.

21.51 The Level Two began well, circulating in descending forms of G major & G minor with notes assigned, before launching into notes chosen by the players in G major. Yet this was undermined by carelessness. So, unable to bring to bear the care that was required, better to stop.

The course has not yet managed to acquire a functioning printer. The present printing situation functions for half the time, Ralph Verde informs me. So, he has to run

down the hill to get sheets printed up. These are two notices for the board which will be pinned up later tonight...

Guitar Craft

St. Vincent de Paul Circle V Ranch
Santa Barbara, California

Tuesday 12th. February, 2002; 16.12

What is the nature of refusal?

Three Approaches To Refusal.

I

Four qualities of refusal:

negation;
aspiration;
attainment;
service.

The refusal to be who-we-are by what-we-are: negation.

The refusal to accept that what-we-are is a sufficient condition: aspiration.

The refusal to be less than who we are: attainment.

The refusal to accept less than what we are born to achieve: service.

II

It is in the nature of refusal to confer definition.

Refusal sets a boundary.

A boundary defines what is within, and what is without.

It is in the nature of definition to convey identity.

Identity is who we are.

The *recognition* of who-we-are precedes the *acknowledgement* of who-we-are.

The acknowledgement of who-we-are precedes our moving to address the necessity of being who-we-are.

Being who-we-are is a process of becoming who-we-are.
We begin where we are.

Who may refuse us this?

III

An act of refusing is governed by the conditions of time, place and person, and is subject to necessity.

Guitar Craft Definition.

Squerd:

A category of food found on many, if not all, Guitar Craft courses.

Commonly takes the form of a glutinous mass with uniform color and consistency, of indeterminate and indeterminable origins.

The assumption is that, whatever the origins may be, this food is good for you.

There are currently two categories of squerd: savoury and dessert.

The colors of savoury squerd tend toward brown and green, indicating the healthy origins of the fundamental ingredient/s: these must be vegetable. Sometimes, however, the colors are brighter; for example, orange (swede) and scarlet-purple (beetroot). These more demonstrative colors may sometimes be compromised by the inclusion of less exciting vegetables, colorwise, in the composite squerd-conglutination. In which case, the default colour tends towards brown.

Dessert squerd frequently features bright colors, often semi-luminescent and even approximating to psychedelic.

One is not sure that this food is any good for us at all. But by the time dessert squerd has been served, usually few care.

Wednesday 13th. February, 2002;

06.35

Last night, while pinning the notice of today's schedule to the board, a Level One indicated that I had put the wrong date on today's schedule – that of yesterday. Doesn't time fly? Alternatively, Fripp's brain has boiled once too often.

Rising at 06.00, showed and gently exercised, now to the sitting...

11.33 The sittings are remarkable for a second day, as was yesterday's sitting for the first day. The superfluous & unnecessary movement among the bodies is very little.

Breakfast was a good opportunity to touch base with several of the Mentoring Buddies. News of the Seattle GC community & arising from Curt; Bill R. had a "small point of seeing" yesterday evening, in the Right Hand meeting of Level One & the MBs that was held in the dining room. Debra felt that music was hovering over the Level Two last evening before being driven away, and had two good ideas.

Walking from the dining room & up the hill: it was spitting. A small outbreak of raining threatened to disrupt the clean, dry & easy movement over the site and between buildings. Fortunately, this has not developed further.

At the Kitchen Team meeting, 08.45, Patrick presented an opportunity for the Team to engage to a greater degree with the kitchen work as a whole.

The Level One meeting at 09.30 attempted to count to 5, and then to 4, but were foiled by both these challenges. But the beginning two circulations were valuable. The first, with a note of the players' choice within the scale of C major or A natural minor, was sloppy & disconnected. The second, with the recommendation that we listen to our note as we play it, was qualitatively different from the first. Comments were invited on the difference between the two, and the third comment suggested that "attention" was involved. Hooray! So, perhaps attention is a way of a crowd becoming a team? But from this point onwards the quality evident in the second circulation drained away. When the circulating dried up irremedially, we addressed lateral & vertical fingerings as ways of developing fingerboard knowledge directly within the left hand.

The Mentoring Buddies are offering 5 small group experiences this morning, with one-fifth of the Level One moving between each. Personal Alexander meetings with Frank & Sandra are also underway.

The Level Two meeting at 10.30 moved through G major; and, to invest the these small gains in knowledge, we also addressed lateral & vertical fingerings a way to develop a better grasp of the fingerboard. Several of those present had never heard of

"lateral & vertical" they claimed. Then, a cross-picking exercise on G minor and we began to address the scale of G natural minor (B flat major).

Next for me, tea & computing.

14.23 A performance at lunch by Marc B. followed by the The Hell Boys and their classic "How Big Is Hell?"

Very good comments over lunch including the words "noticed" & "attention". One L1 noticed how their reaction in the circle, and the effects that had had in the circle, mirrored the effects that reaction had in their ordinary life. Also comments on visual dependence.

Work this afternoon is personal, whether in groups large & small, or individually.

Ralph has visited on practicalities. The Mentoring Buddies, Debra & Hell Boy Tom at visiting Director Lodge 15.00.

17.43 At the 15.00 meeting I reported to the Team the current states of RF, DGM, KC & GC among other acronyms. We checked in and caught up on our various situations and circumstances. Spoke with Curt & Deb at tea.

20.31 A few words about sitting at 18.15. This was followed by burning questions, and some good ones too, that delayed our entrance to the dining room by 10 minutes. Performances by the Mentoring Buddies & The Hell Boys. The Hell Boys were actually a Mark B. solo piece within the protective context of The Hell Boys. This was a stunning & authentic Mark B. performance which was also was true to The Hell Boys as well.

Comments on the day's work were offered and Brad B told a joke.

This evening's work: anyone in the house who wishes to bring a guitar is welcome, subject to two criteria: being in tune & knowing the scale of C major. This large meeting is to be held in the dining room. Brad B is organizing the seating but says he doesn't know C well enough. Ritual disembowelment was suggested as an alternative, but also that his knowledge of C is sufficient to include him in the group meeting.

Four pages of the more recent aphorisms were put on the board this afternoon.

22.11 Large meeting in the dining room with many guitars and an outer & inner circle of chairs. Circulations with single & multiple hits in C major / A natural minor, with a few accidentals thrown in. Also some massive chords in response to gesture. The meeting ended at 22.06 with available practicing time declared as 05.00.

Thursday 14th. February, 2002; 09.19

Valentine's Day, even at a GC course! I've left messages on T's mobile & at Chez Horse in London, although a call to her office tells me she's in Leeds on a tv show, so I'll call later. Also a call to my Sister in San Francisco.

Breakfast – conferring with the MB's regarding the day. Rob R. would like a course in the Atlanta area. Discussion with Tom regarding the future organization of Guitar Craft in North America.

The 08.45 Kitchen Team meeting had good comments. Now, Level One at 09.30 & Level Two at 10.40.

12.47 Level One: circulating and then vamping. The vamping was a wake-up call to any left & right hands that had previously been able to hack away at a single note in circulation. But vamping at a moderately fast tempo, if not quite poco presto approximated more closely to molto agitate. Then, over to the MBs for personal meetings.

Level two: circulating sequentially along the chairs in G major and G natural minor. Then, in response to Deborah's "hope for the course" and her question "Where is music?" – a new GC theme is beginning to emerge. Deborah asked me at the beginning of the course, why no new GC themes had been appearing in recent years. So, giving that some thought, I picked up my guitar two days ago. Or was it three of four or five? The theme continues to emerge in the privacy of Director Lodge.

Ralph V. has been by to check on practicalities. The ordering of GC activities in North America is beginning to be clearer to me.

And – hooray! Hooray! – I have been able to speak to The Little Horse on her mobile, to wish her a Happy Valentine's day (almost) in person.

14.48 Ralph almost managed to put the aphorisms in the right place/s at lunchtime. He will try harder this afternoon. *Share The Joy* meetings begin at 15.00 – these are personal meetings without guitar for RF.

18.50 Meetings now ended for today. Very good comments and questions, almost all very practical & real. Issues of sex, work, self-judgement, shame, marriage. All in all, one more day in the Guitar Craft of life.

Lunch was an interesting time. Very good comment by a Level One on the variations in the right hand information being presented by the Mentoring Buddies. RF responded in some detail to this.

Partly, this is because my personal availability to the more experienced students (some of whom are now Mentoring Buddies) has been very limited in recent years at least, mainly due to the demands on my time, energy & attention on courses by the needs of Level One students (of whom the numbers are usually large). Now, this is no longer appropriate; nor is it the best use of my resources. I am unable to help very much until there is experience directly in the hand, and then I am able to address this experience directly. The information on the operation of the right hand is available, but until there is practical experience and practice little is possible.

And the right hand is only one part of the guitarist's work – musicality is more important, for example. And there is the historical situation: in the early years of GC some of us were effectively without work for 6 years, and performance was important. Apart from its intrinsic value, we sang for our suppers. So the purely technical aspects of right hand picking were only part of the demands upon our time & attention. Now, there is enough experience in the hands of the more experienced Crafties for me to address, and the need for me to do so.

Another very good question: on apparent variations in the recommendation for how much practicing is needed for the right hand; such as "four hours a day – however long that might last". This refers to the intensity of presence engaged during practicing. RF mentioned an exercise to measure the attention span while practicing the Second Primary (or any other exercise) in terms of counting the numbers of bars while undertaking an exercise. Also, RF demonstrated how a focused minute of right hand practicing could be. A minute like this might be more valuable than an hour a day for a week.

20.37 Astonishingly powerful silence walked in to dinner at 19.05 & held. We responded until 19.35 & the last 5 minutes began to waver. Performances with some good heckling, and responses, followed. The performers were put on hold for 30 minutes, as was eating, while silence was present. So the food was cold when eating began, and worth every lack of degree F & C.

The 16 pages of current aphorisms are now on better display around the walls of the dining room.

22.26 The Level Two have taken the new GC theme further and, at our evening meeting, were asked if they felt able to honourably present this to the Level One (who were working in the dining room with Curt & The MBs). A voice said: yes! This was the voice of Tom Hell Boy. So, we gate-crashed the Level One meeting, who were rocking out. We waited until the particular phase came to an end and then presented the new GC theme to the Level One, as it was developed to date.

Then the Level Two returned to the ballroom, leaving Level One with Curt & The MBs in the dining room. One of the Level Two felt charged, and suggested they had the sense that if this energy was not used it would be lost. Not dissipated, he said, but lost. What to do? "Do it again" – from the same voice that had spoken "Yes!" before. So, Level Two went to the dining room a second time. The first time I had stood inside the circle. This time I stood by the door and, at a particular juncture, put off the lights. Someone also put off the lights in the kitchen. At the end of the presentation, lights were switched back on & Level Two returned to the ballroom. The presence of the Level Two Team was tangible in the room.

RF to Level Two: "Now you've earned something. What are you going to do with it?" & left.

Nominally, I was to direct the Level One circle at the end of my work with the Level Two. But Curt & The MBs were rocking out in the dining room & I would have disturbed that process. Nor would I have "improved" the situation. So I came up the hill to Director Lodge & left it to The Buddies.

Friday 15th. February, 2002;

06.32

The year long project, beginning in the second half of 2006, flew by to visit at 06.15 while I was in the shower. What for today, here, I wonder?

08.16 Very good & interesting contrapuntal performance by The Lab Rats at breakfast, and the first time I recall counterpoint being this explicit in a home-grown Guitar Craft piece. Rob Rushin, who seemed to be leading the group, formed the Atlanta Guitar Circle not long ago and, of its some 30 members, 10 are on this course this week.

Curt feels that no amount of personal meetings with Bert to address technical matters on the guitar is likely to have much effect on the Level One students. So we agree: it's into the deep end.

Frank would like to have an opportunity to present some info to the House on the work in Seattle, the upcoming At-A-Distance & personal arising matters.

RP, a Level Two, came up right at the beginning of breakfast to ask for a personal meeting – he has a "more than burning" issue, he says. In the strong silence at yesterday dinnertime, RP saw 3 things clearly; the third of which was that silence had appeared to show him the other 2 things. In my view, this is a function of silence, and part of the blessing it bestows, for those that have the wit to recognize it. Silence confers the gift of insight, if we are able to accept it.

The schedule for the day is posted. Meeting with the Level One at 08.45 – a challenge is about to be presented. Then 09.45 with Level Two before it's time to Share The Joy at personal meetings from 11.00.

10.34 The Level One met at 08.45, asked good questions, and made a cogent series of comments on their work in the groups yesterday evening with Curt & The MBs. They were becoming autonomous, probably for the first time on this course, and yet had not found a balance between the roles of individuals & the group (my words for their comments). Some felt that a few players had been throwing out licks, which had undermined the group; or had moved out of the dining room & left the space of the group, also acting to undermine it.

Against this, another comment: there had been various situations emerging within the group process and that the group had done very well to respond & adapt to the various forces & directions for the 15 -20 minutes that the Level One had been on their own.

All in all, insightful & experiential commentary.

Then a challenge was presented to the Level One, by consulting The Hat. At breakfast, I had asked all the Level One students to bring their names written on a piece of paper. These were then put into The Hat and a series of names pulled from the hat and placed on the floor in groupings of one, two, three, four, five, six, seven & eight names, and then the remaining two names became a duo. Following the series of questions & comments, the Level One were asked to prepare & compose new material (no covers) in these small groups, in addition to one large group piece, and present a performance to the House at 21.00. At which point The Group Discussion began and I found that my feet were carrying me from the room.

Level One met at 09.45 to take the new GC theme further. My own cross-picking is exceptionally naff at the moment: my right hand is presently calibrated to electric guitar right.

13.03 At 13.01 Curt Golden accepted this ...

To Whom It May Concern:

This is to confirm that Curt Golden is the supervisor of Guitar Craft and Guitar Circle activities in North America.

Robert Fripp

Appendix 8 Robert Fripp.doc

Founder, Guitar Craft.

Thursday 14th. February, 2002;

**St. Vincent de Paul Circle V Ranch,
Santa Barbara, California.**

The date is yesterday because the decision was taken yesterday, while acknowledged formally today.

14.07 The notice was pinned on the board at 13.05.

My last personal meetings of the morning, at 12.30, were with Tony, Curt & Paul, to address the right hand; and how to ameliorate the consequences that errors & failings of their first GC instructor have brought to their hands over the past 17 years. The (inappropriate) premise in all three right hands is that we work against gravity. This is a form of the startle response, built directly into the right hand.

A quiet lunch, rather than a silent lunch. Paul sat on the head table and we discussed hate mail & how to deal with it. Paul recognizes that during the past 32 years I have been the target of much hostility and, well, hate mail. So, how to approach this? So, how to turn a seeming disadvantage to our advantage?

- 1. Learn from it: what parts of the nastiness hits a target? What might be true of us in the unkind commentary?**
- 2. For myself, I have preferred to respond to nasty letters in public; for example, Kicking The Wasps' Nest.**
 - i) To introduce a third party as witness;**
 - ii) To hold the hostile party accountable for their actions;**
 - iii) To keep my game sharp; that is, to use the hostility as a pointed stick to support my own work;**
 - iv) Undermine the spuriousness of much criticism; as in the "I have the right to make whatever demands I want on the performer, and to behave as carelessly as I want, and to act without courtesy or manners, because I've bought a ticket with my hard-earned pay" school of thought.**
 - iv) Present an insight to, & demonstrate the nature of, life in the public eye;**
 - vi) Neutralize the negativity.**

But it is very difficult to deal with this while on tour. For myself, when touring & under attack, with my attention primarily directed towards the band & performance, I keep my focus close, centred, and adopt as far as possible a position of radically neutrality.

Sometimes, with the competing demands on the little attention I have available, I am not able to fully protect myself. The most recent example of this was on the KC tour last November. I was under attack by a sour ex-Crim who has actively maintained hostility for many years. Almost every exchange with him contains a barb, an insulting comment, rudeness, or simple unkindness. This is often within the formal context of discussing a business proposal for (say) an archive KC release.

I woke on Thanksgiving morning, having become ill with a succession of (what I experienced as) increasingly toxic e-mails, realising that I was not prepared to continue with this situation; and giving myself permission to disengage from personal communication (professional channels of communication remain open) with a party who communicates intentional ill-will.

But for Paul being the recent recipient of directed nastiness is a more of a novelty.

14.42 The course is gently simmering in a reasonably contained fashion.

16.00 The first six personal meetings with Level One brought good questions: should I be a professional musician – is this an option? the desire to serve music; how to be true to my musical life?

16.51 Tom Redmond accepted the following at 16.23...

To Whom It May Concern:

This is to confirm that Tom Redmond is the supervisor of Guitar Craft finances in North America.

Robert Fripp
Founder, Guitar Craft.

Thursday 14th. February, 2002;

St. Vincent de Paul Circle V Ranch,
Santa Barbara, California.

And one of the Level One has been told, via cellphone, that he has been diagnosed with bone cancer. This is, clearly, a shock.

19.58 Silence came to visit dinner at 19.12 and maintained its presence. Several performances took place within the silence, and eating continued, and several comments were made. The Hell Boys performed, with new guest Level One Hell Girl. Tom sat on the top table afterwards, thus opening himself to questions, and was asked about the origins of The Hell Boys. This is a hilarious story, hilariously recounted by Tom, dating back to his first Level One at Claymont in 1985. (The first public performance of The Hell Boys, as part of the course, took place at the Iron Rail in Charles Town).

21.54 The Level One performance for the House ended at 21.51 when the Team walked out of the ballroom for the second time. The first departure was with guitars but, to the cheers of the audience, they returned without guitars. This prompted disappointment in the fickle audience whose unrestrained applause then turned to booing, as they realised the performers didn't return as performers. A single guitar was passed around the complete circle, ending in the hands of Matt G., the son of a character who attended several courses in West Virginia around 1987. Matt was challenged to play, played a superb & energetic solo, and was then challenged to play his solo blindfolded. Breakfast was suggested.

The performance was lots of fun, and very honourable, with several stunning turns. *Blast O' Crap* introduced themselves and announced the title of the piece - *Here Comes My Ass* - to massive hilarity. Lots of good humour & laughing with a number of unshelled peanuts offered to the performers.

Saturday 16th. February, 2002; 08.03

At breakfast Matt G. played his solo, with woolly hat drawn down over his face, very honourably & energetically; for which he received a standing ovation.

House meeting for Levels One & Two at 08.45 to present the work of the day.

08.19 A sense of the 2006-7 project flew by in the shower again this morning. It is connected to a powerful dream I had during my first night at Sherborne House in October 1975. This was a few days prior to the formal beginning of the course. I have never understood this dream, nor forgotten it, nor discussed it. But this morning I feel it might have relevance to the plans for 2006-7.

09.51 Boy, it's nippy up here in the hills.

The House Meeting offered comments on yesterday evening's performances. A performance is clearly a high-information event. *Blast O'Crapp* refused to reform for a lunchtime performance, but it has been suggested to them that they reform as *Take A*

Long Sip O' My Ass and perform anyway, regardless of what they might want to do, or not. What a performer *wants* to do is irrelevant.

Tom Hell Boy suggested they honour the Gaucho aphorism – they may be ugly, but they sound like shit.

The work for the day: Level Two were asked to present the emerging new Guitar Craft theme to the Level One, to give it away as best as they were able. This requires knowledge of G natural minor. Given that some of the notes circulated in C major more properly belong in G natural minor anyway, perhaps morphic resonance between the courses is already having effect.

The exercise directs attention to the GC aphorism: we only have what we give away. This is an interesting aphorism. If we don't have it, we can't give it away. Against this, we don't get to "own" something for ourselves unless we have managed to give it away.

Hooray! The sun is beginning to shine.

10.18 Patrick S. has called by Director Lodge to present a gift: *Don Severinsen's Closet* on vinyl, with a version of *In The Court Of The Crimson King* as track one. This is one I'm looking forward to hear.

14.02 Several good performances at lunchtime, including a reformed *Blast O' Crap*. A well-wisher sung along: *Here comes my ass, Here comes my ass*. The Hell Boys followed, but refused to allow their support act to steal the stage.

The women on the course have just begun a women's meeting in the neighbouring cabin.

The personal meetings this morning were mostly very good, and real, and practical. Matt G., the 19 year old whose father was on 1987 courses, presented his dad's 3-track CD with a \$20 bill inside; & his own CD with \$40 inside. This is honourable.

15.12 Computer frenzy: I have been editing & viewing files from 1989 & 1990 that might have value for the course. They are to be printed & displayed in the dining room.

16.33 Files from 1989 are now on the dining room walls with more to follow.

Curt & I were vibrating at teatime regarding 2006-7. Curt also tells me that Guitar Craft has the next registrar for North America, subject to Murray (the current official registrar) being consulted. The about-to-be-becoming registrar is Ralph Verde. Also, a vibrating with Tony Geballe & Paul Richards.

21.09 The new theme was honourably presented, as were the small pieces of work undertaken with quality & shown sequentially around the circle. Five minutes after this meeting, Frank spoke on the upcoming AAD 42-day course; his sense of a Location Based Performance Team; the Seattle Circle House & his view of how these might develop. Were I a young single man, Frank's comments would have had me packing my bags and heading towards Seattle.

Fourteen articles written for Guitar Player magazine in 1989-90 are now printed up and spread around the walls of the dining room. The amount of work that was done in the first 6 years of Guitar Craft, prior to the outbreak of Endless Grief, is astonishing.

A remarkable silence visited at dinnertime. Several performances were presented during early dinner, some more therapeutic than purely musical & bravely done. An expanded *Blast O' Crap* with *The Hell Boys & Hell Girls*, alternatively *The Hell Boys & Hell Girls vs. Blast O'Craps*, rendered *Cha Cha Cha From Hell*; then moved to *Blast O' Crap Day To You* for Patrick S.'s birthday.

Silence returned & descended around 19.52 and held for 20 minutes. Activity returned, then about 10 minutes after that it was as if someone tinkled their cup to signify an announcement, but instead - in came silence once again & held for about 30 minutes, until 20.52. The final meeting is now called for 21.30.

I hurtled up the hill after dinner, trumpeting furiously. *Blast O' Crap* had worked its wonders powerfully well.

23.31 Very good Final Meeting with a series of good comments, particularly those invited from the Mentoring Buddies, Frank & Deborah. Of my own declared three aims, two were achieved. The third, to respond to the needs of the course and those upon it, is beyond me. But a huge amount of help has currently been made available to GC.

The printed notices displayed on the course have been given away. The aphorisms I handed to Deborah; the *House Rules* to Curt; *Three Approaches to Refusal* to the student whose comment gave rise to it.

The course was declared completed at 23.25 and 30 seconds subject to final cleaning up. Cleaning the cabins is a responsibility that has been given to the students.

It began to rain during the Final Meeting and is now raining heavily. Had this begun before this last evening, the course would have been much more difficult in practical ways, tramping wet & muddy shoes through the buildings of the facility.

Now, a little packing. My car leaves for Santa Barbara & Hotel Quite Acceptable at 09.50.

Sunday 17th. February, 2002;

07.20

At the morning sitting, my place in the rear row was surrounded by a pile of pillows, sheets & blankets left by the departing team. Ralph V. appeared late last night during the packing & winding down to let me know that my `bus is now at 08.50. So, into a final de-vibration, packing & cleaning of the sink, then it's about-to-be-becoming-having-been-gone time.

Hotel Quite Acceptable, Santa Barbara.

14.11 My Wife is not happy that I am not flying home today. Neither am I. The course was booked too short – I had allowed more time for this in my travel plans. Nevertheless, this is a good town and a quite acceptable hotel for a quiet day.

Ralph V. dropped off Sandra, the Alexander teacher, at the LA Airbus depot in town, then dropped me on State Street. A visit to Barnes & Noble for *Hirohito* over coffee, then Borders (where Kirk Douglas was due for a book signing at noon), lunch on State Street, now to the hotel. Called Sister & pals; now to catnap.

18.27 Ralph & Scott came by at 16.30 to drop off my suitcase & Travelpro Gigster Wonder-Wheelie. Ralph will collect me at 12.00 tomorrow & carry me to LAX. I have excellent take-away salad, and am settled comfortably for the evening.

Reading a *Stopinder* this afternoon, there is an excellent Anthony Blake essay - *The Work In 2000* - plus essays by Frank Sheldon & Allen Roth, Sherborne characters all. I had a sense this morning, driving here, of a new-old direction for my own work in Guitar Craft.

Meanwhile, Baroque Adagios play on the Apple G4.

Appendix 9: Time in Indian Music

Clayton, Martin. Time in Indian Music: Rhythm, Form and Metre in North Indian Rag performance. Oxford: OUP, 2000.

p. 4. Even in studies of musical time, the analytical trap of addressing the product of a musical performance, its form and structure as if 'out of time', is a difficult one to avoid.

p. 6. To an educated listener, there can be no metrical ambiguity in Indian music, which together with the apparent rigidity of Tal structures closes off various possibilities exploited in the European tradition.

p. 6. In fact, I can think of no objective criteria for judging the relative complexity or sophistication of rhythm in, for example, Indian Rag music, Western tonal art music, and that of African drum ensembles, each of which is organised according to a subtle and complex system (only parts of which, in any case, are verbalised or notated).

p. 7. For me, music cannot simply reflect time in general: rather, musical time is the result of a negotiation between physical and psychological constraints on the one hand, and human individuals' attempts to describe and order their experience on the other. Cultural norms and ideologies undoubtedly have an important part to play in this process, but they cannot be a simple determinant of musical structure; nor can the nature of time actively determine (rather than constrain) musical structure.

p. 7. To separate patterns in the music from patterns in the listener, and to separate features necessarily in the music from patterns expected to be in the music, are not easy tasks. For this reason, I suggest that the idea of music as symbolically representing cultural ideologies is both necessary and deeply problematic.

p. 9. [...] I have given relatively little space to the discussion of unmetered music, in other words alap (but see my discussion at 7.2 and in Chapter 12). This is not due to lack of interest in the subject, and nor can I claim that such a study would be irrelevant here – rather I believe that the analysis of unmetered music (so-called 'free rhythm'), which has proved and remains an immensely difficult problem [see Clayton 1996] requires further development of both theoretical perspectives and analytical techniques before I or anyone else can do it full justice.

p. 11. Indeed, since the problem of time is fundamental to all philosophical systems, and temporal organization an equally important aspect of all music systems, connections between music and metaphysics are at least as likely to be manifested here as in any other domain. Thus the Indian concept of 'cyclical' time is of importance in a musical context.

p. 12. Indian music theory historically shows a strong preference for accurate and unambiguous measurement of time. This principle seems to stem from the role of music as a religious act, analogous to and to some extent derived from Vedic ritual. [...] The belief that ill effects could arise from inaccurate time-keeping was surely instrumental in the development, from ancient times, of a rigid and unambiguous rhythmic structure backed up by the complex system of

cheironomy [hand gestures for counting time] of which a vestige survives to this day.

Pp. 12-13. Subhadra Chaudhary explains another aspect of the philosophical importance accorded to time measure. [...] 'There is no sound which is outside time measure and no time measure without sound' [Chaudhary 1997:350-1]

Thus, according to traditional Hindu philosophy, the production of sound and the measurement of time are inextricably linked to each other and to the functioning of the universe.

p. 14. The rag can only be apprehended in performance, in time.

p. 15. Indian music is, then, fundamentally an art of process, but we should not forget that process involves the manipulation of objectified musical materials, nor that such process is valued for its affective power.

Appendix 10: Left and Right Brain attributes

Left brain

analytic
deductive
discrete
sequential
objective
verbal
literal
Exclusion
intellect
Thought as information
Either/or
analyses
denotes
Resists contradictions
Understands the whole as the sum of its parts

Splits the world into identifiable bits and pieces
Processes data one at a time
Looks at details
Sees causes and effects
Draws on previously accumulated and organised information
Has full power of syntax to string words together
Values distinctions
Understands literal meanings
Knows 'how'
Understands time as containing a sequence of events
Linearity
Teleological listening
horizontal
motion
change
progression
becoming
Left brain
temporal

Right brain

holistic
imaginative
continuous
simultaneous
subjective
non-verbal
metaphorical
inclusion
intuition
Thought as emotion
both/and
synthesises
connotes
accepts contradictions
Recognises the whole from an essential individual part
Connects the world into related wholes
Process all data at once
Looks at wholes
Sees correspondences and resemblance
Draws on unbounded qualitative patterns that are not organised into sequences
Recognises sentences or words as single units
Values connectedness
Understands metaphorical meanings
Discovers 'what'
Understands time as containing a complex of events
Nonlinearity
Cumulative listening
vertical
Stasis
Persistence
Consistency
Being
Right brain
atemporal

Attributes of left and right hemispheres of the brain, after Kramer (1988, pp. 9-10; p. 63)

Appendix 11: Ramachandran. 'The Artful Brain'

Notes

http://www.bbc.co.uk/radio4/reith2003/reith2003_lecture3_transcript.shtml

'Let's assume that 90% of the variance you see in art is driven by cultural diversity or - more cynically - by just the auctioneer's hammer, and only 10% by universal laws that are common to all brains. The culturally driven 90% is what most people already study - it's called art history. As a scientist what I am interested in is the 10% that is universal - not in the endless variations imposed by cultures. The advantage that I and other scientists have today is that unlike [before] we can now test our conjectures by directly studying the brain empirically. There's even a new name for this discipline. My colleague Semir Zeki calls it Neuro-aesthetics - just to annoy the philosophers.'

Professor Ramachandran's suggested 10 universal laws of art:

- 1. Peak shift**
- 2. Grouping**
- 3. Contrast**
- 4. Isolation**
- 5. Perception problem solving**
- 6. Symmetry**
- 7. Abhorrence of coincidence/generic viewpoint**
- 8. Repetition, rhythm and orderliness**
- 9. Balance**
- 10. Metaphor**

Appendix 12: Methodologies for practical research

The methodologies on which practical empirical research for this study of temporal perception in the experience of music are based emerged in the course of the investigation. The interdisciplinary nature of the survey, resulting from the global nature of its subject, is reflected in a series of multimedia artefacts developed for empirical evaluation. A single factor shared by the emergent methodologies, in addition to their shared motive, is their heuristic sensibility.

Initial methodological ideas by which music addressing aspects of the research area could be developed were taken from extant examples of work, and the methodology behind it, which seemed to have a particular resonance with the project. Musical exploration polarised to address respectively the studio-based processes defined by Brian Eno, and the vertical music described by Johnathan Kramer. Therefore, on the one hand, solo recordings of soundscapes emulating the practice of Robert Fripp were conducted, while on the other hand, the inclusion of an ensemble of musicians was sought to perform through-composed music based on the process techniques of Steve Reich. A complementary factor of this emerging dual approach was the possibility of defining and applying a single process adapted for each area (the solo area and the ensemble area), with some possibility of data gathering from those involved in the ensemble, which could then be used for analysis in conjunction with observations made from solo efforts.

For the solo work, a home-based recording studio was used, recording onto 2 and 16 track analogue tape, Digital Audio Tape, and the hard drive of a lap top computer. The ensemble work was facilitated by the New Music Ensemble of Brunel University (BNME). The BNME comprised mainly 1st, 2nd and 3rd year undergraduate music students, with occasional postgraduate attendance, and was rehearsed and directed by tutors, primarily Colin Riley, with support from Peter Rudnick and Frank Griffiths. Each area of music-making (the solo and the ensemble) proceeded to take its course, serving to form two parts of a three-way relationship, completed by the direction of academic research. A continuous feedback loop between each aspect of the tripartite methodology emerged.

Notes were kept for each stage of the various processes, and are included in the evaluation of artefacts (Appendix 13). The provision of scored music for the ensemble necessarily formalised aspects of the research, in comparison to the instinctive, unformalised decisions characteristic of solo studio work.

Ensemble tempomorphics

In its early stages, the methodology was primarily concerned with the logistical process of composing, facilitating performance, and noting or recording data for research purposes.

Source material was formalised; scores were generated and rehearsed; performances were booked and executed.

An emergent characteristic of extended process length, linked to the gathering of resources, showed this aspect of research to contrast with other aspects.

Colin Riley's suggestion that the initial ensemble composition, 'Something Will Be Found', should form part of a short cycle of pieces, was an emergent factor leading to the development of the cycle 'Four Times'.

The ensemble aspect of the project provided a valuable source of feedback from impartial observers. An emphasis on repetition and pulse provided characteristic rehearsal and performance problems based on player orientation – an absence of melodic or harmonic 'landmarks' promoted a particularly intense kind of concentration. There was also some objection from an accomplished violinist who

seemed upset about being required to perform a repeated pattern for the duration of the piece: this provided an indicator of acceptable hierarchical conventions in orchestral ensembles.

The compositional methodology for each 'Four Times' piece varied according to the perceived subject for development. 'Something Will Be Found' takes the representation of umwelt theory as its guiding principle, and succeeds in supplying both formulaic cells and overall structure. 'Metre Made' is an attempt to reinterpret a solo soundscape, based on a preconceived harmonic progression, which developed a structure in performance suggesting an opportunity to apply a single compositional process to the solo and ensemble areas. 'Umwelt' investigates Em chord voicings borrowed from Benjamin Britten's 'Turn of the Screw' to supply an episode of stasis in the cycle of compositions. 'Three Textures' takes its material from a piece originally pre-composed for the guitar, concerned with deconstructing a harmonic sequence from a state of teleological definition to a state of cyclic ambiguity as a bed for improvisation.

Solo tempomorphics

At the time of writing, the methodology for solo empiric research has developed through four phases, focussing on issues surrounding the use of complementary still images for tempomorphic performance, and concerned with the development of audio-visual artefacts for academic evaluation. Phase (i) is characterised by tempomorphic performance with or without accompaniment with projected still images. Phase (ii) is characterised by a sequential process of image selection, the structuring of those images, and the manipulation of the structured selected images. Phase (iii) is characterised by the presentation of structured selected images in accompaniment to performance, and the documentation of the event as artefact. Phase (iv) is characterised by the post-production manipulation of the artefacts resulting from phase (iii), treating audio and visual components as concrete.

Phase (I): performance.

The methodology was informed and developed as the result of exposure at a conference at which a paper was given, followed by a solo performance. Both the paper and the performance served to shape the direction and focus of study. The following description of the performance is taken from Chapter 4 of this study:

[...] live performance generates research material concerned with addressing such issues as the visual interpretation of tempomorphic procedure. The use of guitar and processing equipment is appended with the addition of a slide projector (Liminal conference, Twickenham, 2000). For this event, 43 transparencies are used, featuring portraits, each slide being shown for ten seconds before being changed by a technician. The additional human factor of portraits and the technicians judgement of projection timings are perceived to have an impact on syntactical performance by the practitioner (myself). The recording of the performance on video tape affords subsequent empirical evaluation. The liminal position of myself as combined performer and audience is apparent from the images captured on video, as, in near-darkness, I share the audience view of projected slides from a comparative perspective with the audience represented by the video camera. The convention of improvisation is more evident in this performance, where the placement of the performer in surroundings alternate to those dedicated to the processing of audio signals brings additional factors to the event.

Signal volume, for example, is judged according to spatial acoustic considerations rather than to facilitate optimum recording levels. An emphasis on the representation of a given temporal hierarchy, such as the prototemporal, is replaced with an awareness of representing the temporality of the current event in relation to the projected image, and the subjective performance response to that image. The possibility of rejecting the performance (an option available when evaluating recordings for processing to CD) is removed, resulting in the presence of a tension absent from an event without an immediate external audience.

Three aspects of the performance given had a radical impact on the subsequent research methodology. Firstly, a definition of the nature of the performance was felt to be advantageous, as this would serve to define the aim of the performance, thereby informing it; secondly, a collection of images used for projection suggested a new area of method for development; and thirdly, subsequent viewing of video tape of the performance similarly suggested how the research methodology might be developed.

The terminology decided upon to address the first of these issues (that of defining the nature and aim of the performance) was reviewed to replace telemorphic with tempomorphic. This latter term has since served to define the subject of study; in other words, the way in which music (having particular characteristics of tempo) has an impact on the perceived passage of time, thereby changing the time for the audience. The second issue (of images for projection) raised above has developed to become an overriding principle informing and governing the practical research of the project, and will be discussed further below. The third of the issues raised above (reviewing the performance by means of video tape) had an impact on an emergent methodology as it was used as a springboard from which to develop a process which has culminated in the provision of several video-taped performances for evaluation. The three aspects to emerge from a review of the solo performance at the Liminal conference 2000 are, therefore, performance, multimedia presentation, and formative evaluation. Issues surrounding the aspect of performance are addressed in chapter 4 of this survey. The remaining two issues, multimedia presentation and formative evaluation, will now be addressed in reverse order.

Phase (II): Formative evaluation

A review of video taped performance led to a series of questions addressing practical aspects of the performance from the context of supplying the overall project with material for evaluation in which each aspect of the multimedia presentation could be clearly defined and analysed. The over-riding question which emerged was concerned with how future audio-visual recordings could be improved for the purposes of quantifiable evaluation.

The areas to be addressed in order to attain an overall improvement fall into categories of venue, performance structure, multimedia content, recording possibilities, technical considerations of equipment, and artefact production.

A side product of the analytical thinking which was taken up was a sense that while aleatoric or indeterminate factors might have a (welcome) role to play in the outcome, where possible it was desirable to demonstrate a developed train of thought, from which (it was hoped) would emerge a method affording analysis. The particular area of the solo performance project impacted upon by these factors was that of the selection of images for inclusion in the multimedia presentation.

It was also felt that as each area was addressed, it would have an impact on the other areas, and that solutions might suggest themselves.

Another factor, felt to be of importance within the context of the research project, was the coincidental research problem of organising, for written presentation, the findings of a literature review covering a wide range of issues with no apparent logical sequence in which to structure their relationship. It was hoped that the solution to the practical problem of multimedia presentation might in some way suggest a solution for the academic problem of presentation of findings. In reviewing the ways in which other performances might be improved, a model of expression was consulted, wherein six components of musical performance are described.

- | | |
|----|--|
| 1. | A representation of structure |
| 2. | A performance procedure |
| 3. | An encoding function |
| 4. | A representation of position in the music (either metrical distance or time) |
| 5. | A set of structure variables |
| 6. | A set of style parameters. |

Source: Clarke & Windsor. 2000, p. 280

The list of six components, although originally designed as a purely auditive construct, proved a useful tool with which to consider how multimedia processes could be organised. The two aspects which most readily lent themselves to reinterpretation for a multimedia platform were those characterising a representation of structure and a performance procedure.

The idea that a sequence of images could provide a structure combined with a performance procedure began to take shape, resulting in the 'Hierarchy, plasticity and form' image sequence.

Multimedia presentation: the attraction of imagery

A review of available images, or rather, images gathered as a direct consequence of research was executed, with the possibility of finding a solution to the academic problem referred to above. Image selection became more focussed, as images were selected and discarded on a basis of research relevance, projection suitability and an emerging resonance of individual content with the musical character of their potential. (It should be pointed out that in the course of the literature survey, reference to pictorial, graphic, photographic and tabulated material was common, not least because of the multidisciplinary aspect of the study of time.) The resonance between images has been manifested in the sequence so that the circle described by the golfers club segues into that of Marcel Marceaus mimed circle of life (images 16 and 17); a neo-plasticist work by Mondrian precedes a graphic musical composition by Earle Brown (images 26 and 27); and the self portraits of Rembrandt van Ryn merge into each other emphasising facial characteristics rather than the artists supplied context.

A blueprint for a redesigned tempomorphic performance continued to take shape with the decision to replace analogue slide projection with a computerised system of projected images. The potential advantages of this were estimated to include a) a higher degree of automation, thereby b) increasing a quantitative and c) structural element, d) a reduction of dependence on an additional performer/technician, and e) an increased potential for manipulation of media with digital processing.

Image manipulation

In order to realise these aims for improvement, the first steps of the new phase of a methodology comprised of image selection, scanning and cropping. This last was necessary in order to eliminate the reproduction of unwanted text and so on when the desired image was found in a publication. Care was also taken to record full bibliographical details of each image. Further manipulation was used in addition to basic cropping in the case of three specific instances. The first instance of extraordinary manipulation was necessary to separate a series of images represented as a single image into a series of discrete images (images 1-8). The second (and most extreme) instance of additional manipulation took place as the result of observations made during the editing of a photograph representing an installation (image 35). In adjusting the necessary scanner parameters to achieve an acceptable image quality, a zooming into the picture was observed, by chance, which happened to emphasise the size and scale of the three-dimensional artwork. A series of zoomed in reproductions of parts of the overall image were produced, believing these reproductions to enhance certain characteristics of the original artwork. The third instance of additional manipulation took place in order to promote a sense of enhanced continuity between self-portraits by Rembrandt (images 36-40).

A library of research pictures came to be extended as the methodology took shape, and alternative methods of computer-based viewing were tested. Of particular interest for the task of projection to accompany performance was the Apple Mac iMovie programme. This basic film-making software offered such facilities as text, crossfade, audio soundtrack, and timeline display (showing clip duration). Using these facilities, the possibilities of constructing a sequence from the selected images expanded to suggest ways in which the sequence might explain itself, (should the images form part of a presentation other than one which was purely musical).

Hierarchy, plasticity and form.

As the idea that the image sequence could potentially form part of an academic debate became increasingly defined, the use of interdisciplinary terminology was evoked to describe aspects of the image sequences. The prevalence of hierarchies in the research, in addition to the application of orthogonal principles to develop a methodology of plasticity by Mondrian, and the aim of exploring music forms established by selected practitioners each impacted on the emergent academic narrative of the image sequence. The images were therefore ordered into groups denoted pertaining to hierarchy, plasticity, and form.

The attraction of having developed a methodology that could be applied to music-making and to the research project - and potentially reflected characteristics of the methodologies of practitioners under review - was only partially negated by concerns that the method would require validation. Concerns regarding validation for this area of practical research centred around the selection of image content. On reflection, the Hierarchy, plasticity and form (HPF) methodology developed as the result of four factors of the research project. Firstly, the methodology affords the development of a narrative teleological structure using content developed from an initial slide selection. Secondly, the methodology is founded on establishing a link between the iconography and imagery highlighted by the research project, and the practice of music. Thirdly, the methodology reflects relationships between the stylistic developments of orthogonal principles, their part in informing plasticism, and the subsequent development of minimalism. Fourthly, the emergent process reflects a heuristic search for a valid methodology taking example from practitioners including Mondrian, Varèse, Pollock, Reich, Glass, Stockhausen, Fripp, and Eno.

Having completed the second phase of the methodology, precedence for an interdisciplinary, multimedia project was found in the work executed by Varèse, Corbusier and Xenakis for Philips for the 'Poème Electronique'.

Criteria and aims informing a methodology for visual tempomorphic representation.

1. A perceived absence of conventional performance activity in tempomorphic performance¹ suggests the exploration of alternative visual stimuli to complement a visually 'static' performance practice.²
2. An aim of this research is to explore the provision of a model to develop a possible methodology for an evaluation of cultural concepts of temporality contributing to a thesis chapter focussing on concepts of time.
3. Perceived problems relating to the presentation and interpretation of culturally perceived temporal values suggests the exploration of an evaluation of contextual temporal elements using the 'alternative' media of graphic representation.
4. The identification of visual imagery to complement and reflect parameters of tempomorphic performance has occurred in the research process. Images are taken from score examples, photographs of practitioners and composers, and graphic representations of interdisciplinary and intercultural themes.³
5. Empirical interdisciplinary findings suggest the exploration of three criteria to provide a structure for images compiled according to their iconography and research relevance.
6. Visual media are therefore structured using emergent research criteria constituting 'Hierarchy', 'Plasticity' and 'Form':
 - The criteria of Hierarchy reflects the nested temporal hierarchies described by Julius Thomas Fraser,⁴ the species-specific umwelts described by Jakob von Uexküll,⁵ and the temporal hierarchy reflected in the laws of

¹ 'Tempomorphic', derived from tempo (speed) and morph (form). The use of the term tempomorphic to refer to the study of varieties of perceived temporalities, or forms of time, reflects terminology used in other disciplines, such as the investigation of land forms, and referred to as geomorphic study.

See Doyle, Robert. 'Definitions of Tempomorphic Performance'.

<http://www.brunel.ac.uk/depts/pfa/bstjournal/index.htm>

² 'Perhaps the most crucial way in which electro-acoustic music disturbs the conventional processes of western music is in its tendency either to remove or radically alter the role of the performer. The possibility inherent in this medium for a composer to deal directly with sound material, and to address his audience with only the mechanical and, ideally, neutral intermediary of a sound production system, was seen as an advantage, as is apparent in many of the views quoted earlier. But there are a number of counterbalancing disadvantages: (1) the lack of a visual element in the concert situation; (2) the lack of a sense of human effort and involvement; (3) the lack of the creative potential of the secondary process of interpretation, which in other music lends a desirable vitality and individuality to successive performances, including the unquantifiable but nevertheless important element of feedback between performer and audience which reinforces the transactional, ritualistic nature of the event.'

Bridger, Michael. Evolving musical style thesis-structural, expressive and contextual aspects of selected electro-acoustic compositions by Berio, Cage, Ligeti, Stockhausen and Varese. Ph.D., University of Keele, 1986.

³ See 'Hierarchy, plasticity and form' I-Movie references.

⁴ Fraser, Julius. The Genesis and Evolution of Time. Great Britain: Harvester Press, 1982.

⁵ Von Uexküll, Jakob. 'A stroll through the world of animals and men' In Instinctive Behaviour. Trans./ed. Claire Schiller. New York: International Universities Press, 1957.

- thermodynamics, dictating a progression from order to entropy.⁶
- The criteria of Plasticity reflects a) interdisciplinary interpretation reflecting characteristics of the De Stijl movement,⁷ and especially interpretations of the methodology developed by Piet Mondrian;⁸ and b) heuristic study using a system of analysis reflecting perceived characteristics of Plasticity.
 - The criteria of Form is used as a teleological device representing perceived manifestations of hierarchy and plasticity among practitioners and the results of interdisciplinary performance practice.⁹
7. Aims of this area of research include: exploring the provision of visual stimulus for generation of aural tempomorphic performance, and exploring an automatic system of visual representation, minimising a dependence on direct human performance involvement.
 8. Visual representations are structured teleologically, moving towards a 'goal' of images perceived to represent a specific area of musical activity, from which a methodology informing a tempomorphic performance practice has been formed. The display of structured imagery may be suitable for recordings of tempomorphic performances.
 9. Predominantly regular duration for selected images provides a 'score' to which loops can be synchronised. Performances from the score, it is suggested, will reflect elements of plasticism (variable interpretation of identical parameters) and liminality (a 'betwixt-and-between' accuracy of manual synchronisation).¹⁰

⁶ 'The increase of disorder or entropy with time is one example of what is called an arrow of time, something that distinguishes the past from the future, giving a direction to time.'

Hawking, Stephen. A Brief History of Time. Great Britain: Transworld, 1988. P. 145.

⁷ Frampton, Kenneth. 'De Stijl' Concepts of Modern Art. London: Thames and Hudson, 1994.

⁸ 'What is characteristic of Mondrian belonged to his temperament, and to the philosophy of life that went with it. Though he was much influenced by his great contemporaries, particularly Picasso and Braque in their cubist phase, his development was organically consistent, and it is this consistency, combined with a passionate search for the plastic equivalent of a universal truth, that has made Mondrian one of the dominant forces of the modern movement.' Read, Herbert. A Concise History of Modern Painting. London: Thames and Hudson, 1968. Pp.196-7.

⁹ 'In the conventional division of the arts into spatial and temporal arts, music figures as the temporal art par excellence. The division and its underlying principle are, as we shall see, poorly founded; yet the systematists are right when they see the universal element, [Hegel, *Vorlesungen über die Aesthetik*], the primal form [Schlegel, *Vorlesungen über dramatische Kunst und Literatur*], of music in temporal succession. Schopenhauer writes: Music is perceived solely in and through time, to the complete exclusion of space [Arthur Schopenhauer, The World as Will and Idea].

Zuckerkandl, Victor. 'Meter and Rhythm' Sound and Symbol: Music and the External World. Trans. Willard Trask. Princeton: Princeton University Press, 1956. Pp.151-2.

¹⁰ For definitions of liminality see Turner, Victor. 'Are there Universals of Performance in Myth, Ritual, and Drama?' By Means of Performance Cambridge: Cambridge University Press, 1990, Pp. 11-12.

Hierarchy, plasticity and form
21:5:2002

Media: Images scanned and processed with Photoshop; sequence and titles created with i-Movie.
Duration: 15:17.
Audio: Doyle, Robert. 'Diminished Space'. 2002.

Criteria for selection and inclusion.

Over the research period, images have been found or have suggested themselves, either through inclusion in reference works (as supporting evidence), or as independent works in their own right. Four primary criteria governing the selection and inclusion of images include senses in which they: (A) illustrate a sequence, (B) represent a methodology used by a practitioner, (C) document the likeness of a practitioner, or (D) provide a visual resonance for 'moment music' stimuli. They contribute to the development of an analytical approach based on heuristic principles (Eno, p. 342). A further criteria for the ordering of the selection sequence was the resonance of actual or implied imagery between one selection and the next. Therefore, the circle described by the golfer's club is imitated by the circle of Marcel Marceau's mimed representation of the stages of life (images 16-17); a neo-plasticist work by Mondrian segues into a graphic composition by Earle Brown (images 26-27); and the composition of self-portraits by Rembrandt van Ryn have been cropped to emphasise the facial features of the artist (images 36-40).

References

Hierarchy	Criteria for inclusion	Additional notes
		Underlying criteria for investigation/orthogonal strategy for method.
10. Africa <u>Zeit: Die vierte Dimension in der Kunst</u> ,D-6940 Weinheim: Acta Humaniora, 1985. P. 71.	(A) illustrates a sequence	Conventions in discipline: in music as in culture. The Orient defines the West (Said. 1992, p. 136). Chernoff. <u>African Rhythm and African Sensibility</u> . 1981
11. China <u>Zeit: Die vierte Dimension in der Kunst</u> ,D-6940 Weinheim: Acta Humaniora, 1985. P. 71.	(A) illustrates a sequence	Convention of pulse, beat and meter. Pentatonic. Oriental/occidental poles. 'Rhythm is never on the same plane as that which has rhythm' (Deleuze and Guattari. 1988, p. 313). 'What is rhythm? Is it the rhythm of the timbres, of the spatial motion, of the pitches, of dynamics? Anything can function as rhythm' (Cott. 1974, pp. 184-185).
12. Indian <u>Zeit: Die vierte Dimension in der Kunst</u> ,D-6940 Weinheim: Acta Humaniora, 1985. P. 71.	(A) illustrates a sequence	Convention of raga and tala, compared to scales and modes. 'I [Viram Jasani] think a raga is a product of time and people playing that raga over a period of time. It's a product of people's changing attitudes and tolerances'. (Bailey. 1992. p. 10) 'The particular raga in use (there are said to be some eight hundred in all) determines what we

		would regard in the West as melody and, by extension, improvisation' (Glass. 1988, pp. 16-18).
13. Islam <u>Zeit: Die vierte Dimension in der Kunst</u> .D-6940 Weinheim: Acta Humaniora, 1985. P. 71.	(A) illustrates a sequence	Conventions of sacred/secular music. Spiritual/bodily: '...all academic knowledge about India and Egypt is somehow tinged and impressed with, violated by, the gross political fact...' (Said. 1992, p. 143) Qu'ran as performance: <u>My Life in the Bush of Ghosts</u> , track 3 'Regiment' and track 8 'The Carrier' (Dunya Yusin, Lebanese mountain singer, from <u>The Human Voice in the World of Islam</u> Tangent records TGS 131).
14. Japan <u>Zeit: Die vierte Dimension in der Kunst</u> .D-6940 Weinheim: Acta Humaniora, 1985. P. 71.	(A) illustrates a sequence	Convention of extended time in tea ceremony. Indigenous instrument conventions. Developing guitar. Technology – the Sony corporation (minidisks).
15. Latin America <u>Zeit: Die vierte Dimension in der Kunst</u> .D-6940 Weinheim: Acta Humaniora, 1985. P. 71.	(A) illustrates a sequence	Dance conventions, periodic rhythmic sequence. Salsa/danson. Waltz.
16. Occident <u>Zeit: Die vierte Dimension in der Kunst</u> .D-6940 Weinheim: Acta Humaniora, 1985. P. 71.	(A) illustrates a sequence	Harmonic development, providing structural alternatives, serialism. Greek modes.
17. Simultaneous <u>Zeit: Die vierte Dimension in der Kunst</u> .D-6940 Weinheim: Acta Humaniora, 1985. P. 71.	(A) illustrates a sequence	Expression of extra-musical, interdisciplinary ideas: Xenakis/mathis, Duchamp, Satie. Stravinsky 'Rite'. Vertical music. Harmony. 'The drone-based accompaniment – in which pitches are sustained for long periods, usually by upper strings and voices – makes a significant contribution as well. Most important, however, is Young's concern with exploring the innards of sound over extended time-periods.' (Potter. 2000, p. 61).
18. Time (front page) <u>Time</u> By A. J. Turner (Ed.) Amsterdam: Tijd voor Tijd, 1990.	(B) represents a methodology	Objectivity reflected in 'scientific' imagery/iconography. 'Time as space/Time as force or commodity/Time as number/Time as telos '(Barry. 1990, p. 198). Nested temporalities: 'the temporal umwelts in the structure of human-time perception form a hierarchy of nested presents, corresponding to the temporalities postulated by the principle of temporal levels. They are all subsumed in the mental present' (Fraser, 1982, p. 164).
19. 'Here and Now'. <u>Time</u> By A. J. Turner (Ed.) Amsterdam: Tijd voor Tijd, 1990. P. 50.	(B) represents a methodology	Objective analysis: Helmholtz and frequencies. Cycles: minimalism. 'Clapping Music'.
20. 'Two Universal Equinoctial Ring Dials, mid-18 th century'. <u>Time</u> By A. J. Turner (Ed.) Amsterdam: Tijd voor Tijd, 1990. P. 139	(B) represents a methodology	Objective measurement: meter and hypermeter. Cycles: Epstein.
21. Stone, Herbert. <u>The Stones of Stonehenge</u> . 1924. <u>Man and Time</u> by J. B. Priestley. London: Aldus Books, 1964. P. 22.	(B) represents a methodology	Technology as sculpture. Interdisciplinary transcendence from functional form to art form. Ambient music. Cycles: tape and digital loops.
22. The Clock of the Long Now http://www.longnow.org/	(D) provides a visual resonance for 'moment music' stimuli	The Greater Present Moment/ time and responsibility. Useful functions of temporal conceptions grounded in momentary responsibility. Generative music.
23. Lessing, Erich. [Einstein's lab.] <u>Man and Time</u> by J. B. Priestley. London: Aldus Books, 1964. P. 83.	(D) provides a visual resonance for 'moment	Einstein's impact/Glass/relativity/laws of imagination: scientific knowledge about time cannot be found in clock readings (the empirical

	music' stimuli	evidence) but is implicit, instead, in the laws of nature (the exercise of imagination) (Fraser. 1982, p. 18).
24. Broodtaers, Marcel. <u>Mitternacht</u> . 1969. Privatsammlung, Brussel. <u>Zeit: Die vierte Dimension in der Kunst</u> , D-6940 Weinheim: Acta Humaniora, 1985. P. 19.	(D) provides a visual resonance for 'moment music' stimuli	Component parts of a chronometer as art/ art as a sum of parts/process. Musical processes.
25. Edgerton, H. E. [Golfer swinging club.] <u>Man and Time</u> by J. B. Priestley. London: Aldus Books, 1964. P. 80.	(B) represents a methodology	Alternative analyses of actions in time. Performance. When does the performance start?
26. Weill, Etienne. Photo. [Marcel Marceau.] <u>Man and Time</u> by J. B. Priestley. London: Aldus Books, 1964. P. 119.	(B) represents a methodology	Representation as structure: suite, e.g. The Planets. Narrative/non-narrative-Einstein on the Beach. 'two lovers' Cycle.
27. 'Ornate clock face'. <u>Time</u> By A. J. Turner (Ed.) Amsterdam: Tijd voor Tijd, 1990. P. 211.	(B) represents a methodology	Ornamentation/minimalism/'strung out'/effects/delay. 'From now on there are three alternatives : live music, recorded music and generative music' (Eno. 1996, p. 332). 'In controlling time in such precise periodic quantities, the body acts as a clock' (Epstein. 1995, p. 138).
Plasticity		
28. Magritte, Rene. <u>The Human Condition I</u> , 1933. <u>Modern Art: Impressionism to Post-Modernism</u> , By David Britt (Ed.). London: Thames & Hudson, 1999. P. 239.	(B) represents a methodology	Repetition/Reich 'When the intricacies of serialism reached a level of confusing complexity and exclusivity, sated audiences turned to its opposite number - oversimplified accessible music with no continuity, and with forms that were not bound up with memory' (Polin. 1989, pp. 236-8). 'Music for Eighteen Musicians is surely one of the masterpieces of late twentieth-century music' (Potter. 2000, p.245).
29. Man Ray. <u>Gegenstand der Zerstörung</u> . 1959. <u>Zeit: Die vierte Dimension in der Kunst</u> . D-6940 Weinheim: Acta Humaniora, 1985. P. 220.	(B) represents a methodology	Using a metronome/awareness of musical time-keeping. 'Time in any work of art may be considered in three different frames of reference. There is the duration of the interval during which the artist created the art. The second kind of time in art, the actual duration of the interval as the audience perceives, understands, and reacts to the artistic communication. Of greatest significance is the third temporal factor, the interval actually portrayed in the art itself.' (Doob. 1971, pp. 377-9) In all the arts, including even music, I would contend, the artistry of the creator involves a delicate interplay between the clock time spent in perceiving the art and the fictitious time portrayed therein (Doob. 1971, p. 382).
30. Vantongerloo, Georges. <u>Interrelation of Masses</u> . 1919. <u>Concepts of Modern Art: From Fauvism to Postmodernism</u> . Ed. Nikos Stangos. London: Thames and Hudson, 1994. Illustration 69.	(D) provides a visual resonance for 'moment music' stimuli	Structure/balance/Golden Section. '...what Chartres is to the Gothic and St. Peter's to the Baroque, the World Trade Center is to Minimalism' (Strickland. 2000, p. 9). Additive rhythm.
31. Muybridge, Eadweard. <u>Galloping Horse</u> . 1883-85. <u>A Concise History of Photography</u> . By Helmut and Alison Gernsheim. London:	(D) provides a visual resonance for 'moment music' stimuli	Technology providing commentary: Cage 'Variations'/Fontana Mix'/Varèse. 'Flynt argues that Cage's <i>0'00"</i> (1962) and <i>Variations III</i> (1963) can be seen as attempts to

Thames and Hudson, 1965. P. 156		keep up with the example set by Young's word pieces[...] Young's move into conceptual art may have sprung from a Cageian base, but it already occupied new territory. Cage himself said in 1961 that "La Monte Young is doing something quite different from what I am doing, and it strikes me as being very important. Through the few pieces of his I've heard, I've had, actually, utterly different experiences of listening than I've had with any other music". (Potter. 2000, p. 53)
32. Mondrian, Piet. <u>Pier and Ocean</u> . 1915. Rijksmuseum Kröller-Müller, Otterlo. <u>Concepts of Modern Art: From Fauvism to Postmodernism</u> . London: Thames and Hudson, 1994. Illustration 70.	(D) provides a visual resonance for 'moment music' stimuli	Application of hierarchy to develop methodology. Young dream chord. Riley/Reich tape phasing. Musique Concrete.
33. Mondrian, Piet. <u>New York City: New York City I</u> . 1941 (first state) 1941-1942 (second state). Musée national d'art moderne, Centre Georges Pompidou, Paris <u>Piet Mondrian: 1872-1944</u> . By Yve-Alain Bois, et al. New York: Little, Brown and Company, 1995. Plate 164.	(D) provides a visual resonance for 'moment music' stimuli	Multidisciplinary interpretation. Developing method. Reich pulse phasing. The New World, America as the saviour of Europe. New York industry/machine. 'In 1938 Thomas Mann, announcing his intention to settle in the United States, predicted that "for the duration of the present European dark age the centre of Western culture will shift to America"' (Conrad. 1998, p. 501). 'As the world grew smaller, its separate cultures hybridized. After 1945 Western Europe was enrolled in the American empire and - as "The Good, the Bad and the Ugly" demonstrates - it adopted American history as its own' (Conrad. 1998, p. 527).
34. Mondrian, Piet. <u>Broadway Boogie Woogie</u> . 1942-1943. The Museum of Modern Art, New York. <u>Piet Mondrian: 1872-1944</u> . By Yve-Alain Bois, et al. New York: Little, Brown and Company, 1995. Plate 165.	(D) provides a visual resonance for 'moment music' stimuli	Rhythm in two dimensions. Boogie-woogie. Convention and innovation.
35. Mondrian, Piet. <u>Composition in Blue, A</u> . 1917. Rijksmuseum Kröller-Müller, Otterlo. <u>Concepts of Modern Art: From Fauvism to Postmodernism</u> . London: Thames and Hudson, 1994. Illustration 73.	(D) provides a visual resonance for 'moment music' stimuli	Different moments: 'Momente' Stockhausen. Cage '4'33''.
36. Brown, Earle. <u>December 1952</u> . <u>The New Music</u> by Reginald Smith Brindle. New York: Oxford University Press, 1987. P. 89.	(D) provides a visual resonance for 'moment music' stimuli	Emergent style. Less is more- Minimalism. Improvisation/the beholder's share. '[...] space seen by the camera differs from that seen by the spectator in a theatre: a triangle that widens from the camera aperture as opposed to a rectangle that narrows' (David. 1989, p. 87). 'But I am tempted to argue that the role of audience is much more important than that of the performer in appreciating art and in arresting time' (Doob. 1971, p. 376).
37. Cage, John. <u>Fontana Mix</u> . 1958. <u>Modern Music</u> . By Paul Griffiths. London: Thames and Hudson, 1994. Illustration 165.	(D) provides a visual resonance for 'moment music' stimuli (B) represents a methodology	lineage of Cage influence: Debussy/Satie/Duchamp/Schoenberg/Darmstadt Emergent trios:
38. Schardin, Hubert. <u>Bullet passing through candle flames</u> . and the sound waves caused	(D) provides a visual	Reinterpretation of familiar events out of and in music: phasing/non-narrative.

and the sound waves caused by it, c.1950. <u>A Concise History of Photography</u> , By Helmut and Alison Gernsheim. London: Thames and Hudson, 1965. Plate 139.	resonance for 'moment music' stimuli	Increased focus on the moment: 'Particle physicists may freeze a second, open it up, and explore its dappled contents like surgeons pawing through an abdomen, but in real life, when events occur within thousandths of a second, our minds cannot distinguish past from future. Within the millisecond, the bat presses against the ball; a bullet finds time to enter a skull and exit again; a rock plunges into a still pond, where the unexpected geometry of the splash pattern pops into existence. During a nanosecond, balls, bullets, and droplets are motionless'. (Gleick. 1999. p. 6) 'One note is all notes' (Fripp aphorism).
Form		
39. Dibbets, Jan. <u>Daylight/Flashlight Outside Light/Inside Light</u> , 1971. Leo Castelli Gallery. <u>Concepts of Modern Art: From Fauvism to Postmodernism</u> , London: Thames and Hudson, 1994. Illustration 120.	(D) provides a visual resonance for 'moment music' stimuli	The same place with one parameter changed. Oblique strategies. Polarities. Pantonal. Atonal.
40. Van't Hoff, Robert. <u>Huis-ter-Heide</u> , 1916. <u>Concepts of Modern Art: From Fauvism to Postmodernism</u> , Ed. Nikos Stangos. London: Thames and Hudson, 1994. Illustration 72.	(B) represents a methodology	The results of applied method.
41. Schneiders, Toni. <u>Air bubbles in ice</u> , 1953. <u>A Concise History of Photography</u> , By Helmut and Alison Gernsheim. London: Thames and Hudson, 1965. Plate 215.	(B) represents a methodology	Amplified objectivity as art.
42. Pollock, Jackson. <u>Ungeformte Figur</u> , 1951. (Detail). Depot Nationalgalerie, Berlin. <u>Zeit: Die vierte Dimension in der Kunst</u> , D-6940 Weinheim: Acta Humaniora, 1985. P. 72.	(B) represents a methodology	Improvisation in painting. Multidisciplinary feedback loop. 'On the floor I am more at ease. I feel nearer, more a part of the painting, since this way I can walk around it, work from the four sides and literally be 'in' the painting. This is akin to the method of the Indian sand painters of the West. [...] It is only when I lose contact with the painting that the result is a mess' (Johnson. 1982, Pollock.1947-8, p. 4).
43. Wilson, Robert. <u>Still from Einstein on the Beach</u> 1976 <u>Modern Art: Impressionism to Post-Modernism</u> , London: Thames & Hudson, 1999 P. 380.	(B) represents a methodology	Establishment of applied criteria/revolutions in opera/links with dance/theatre/narrative/stylistic crossover/commercial success.
44. Buren, Dan. <u>Les Deux Plateaux</u> , 1986. <u>Modern Art: Impressionism to Post-Modernism</u> London: Thames & Hudson, 1999. P. 383.	(A) illustrates a sequence	Installation. Laurie Anderson/Brian Eno.
45. Rembrandt van Ryn. <u>Self Portrait</u> , 1648. Radierung, zweiter Zustand. <u>Zeit: Die vierte Dimension in der Kunst</u> , D-6940 Weinheim: Acta Humaniora, 1985. P. 147.	(A) illustrates a sequence, (B) represents a methodology	Selected criteria for subject matter. Object/subject dichotomy.
46. Rembrandt van Ryn. <u>Self Portrait</u> , 1652. Kunsthistorisches Museum, Wien. <u>Zeit: Die vierte Dimension in der Kunst</u> , D-6940 Weinheim: Acta Humaniora, 1985. P. 147.	(A) illustrates a sequence, (B) represents a methodology	Influence of Europe.
47. Rembrandt van Ryn. <u>Self Portrait</u> , 1657. Kaiserl.-	(A) illustrates a sequence, (B)	Representational titles: study/piece/composition

königliche Galerie, Wien. <u>Zeit: Die vierte Dimension in der Kunst</u> . D-6940 Weinheim: Acta Humaniora, 1985. P. 147.	represents a methodology	
48. Rembrandt van Ryn. <u>Self Portrait</u> . 1660. Musée de Louvre, Paris. <u>Zeit: Die vierte Dimension in der Kunst</u> . D-6940 Weinheim: Acta Humaniora, 1985. P. 147.	(A) illustrates a sequence, (B) represents a methodology	Representational titles: study/piece/composition
49. Rembrandt van Ryn. <u>Self Portrait</u> . 1669. Mauritshuis, Den Haag. <u>Zeit: Die vierte Dimension in der Kunst</u> . D-6940 Weinheim: Acta Humaniora, 1985. P. 147.	(A) illustrates a sequence, (B) represents a methodology	Representational titles: study/piece/composition
50. Avedon, Richard. <u>Igor Stravinsky</u> . 1958. <u>A Concise History of Photography</u> . By Helmut and Alison Gernsheim. London: Thames and Hudson, 1965. Plate 214.	(C) documents the likeness of a practitioner	Syncopation. Internationalism. Serialism. 'Time... is a physical measure to me, and in music I must feel a physical here and there and not only a now, which is to say, movement from and toward' (Schwartz and Childs. 1998, p. 52).
51. John Cage. http://www.johncage.com/	(C) documents the likeness of a practitioner	The next generation. Writings.
52. Leon Theremin. 1927. <u>The Ambient Century</u> . By Mark Prendergast. London: Bloomsbury, 2000. Pp. 244-5.	(C) documents the likeness of a practitioner	Electronic music/Varèse/circuit process 'Cage lamented the fact that the Theremin was quickly adopted by performance specialists who performed Italian Arias with it [...] Brian Eno [...] made a similar argument for the synthesizer' (Beckstead, David. <u>Will Technology Transform Music Education?</u> Music Educators Journal May, 2001, p. 47).
53. Karlheinz Stockhausen. 1973. <u>The Ambient Century</u> . By Mark Prendergast. London: Bloomsbury, 2000. Pp. 244-5.	(C) documents the likeness of a practitioner	Esoteric European progress. 'There's a story of a second violin player who said, "Herr Stockhausen, how will I know when I am playing in the rhythm of the universe?" Stockhausen said, with a smile, "I will tell you"' (Bailey. 1992, p. 72).
54. Miles Davis. 1956. <u>The Ambient Century</u> . By Mark Prendergast. London: Bloomsbury, 2000. Pp. 244-5.	(C) documents the likeness of a practitioner	Improvisation resonant with Pollock. '[Music for 'The Gift' is] mainly based on a recording of [Chet] Baker's band playing Miles Davis's 'So What', from his 1959 album <i>Kind of Blue</i> ' (Potter. 2000, p. 106).
55. Philip Glass. 1989. <u>The Ambient Century</u> . By Mark Prendergast. London: Bloomsbury, 2000. Pp. 244-5.	(C) documents the likeness of a practitioner	Ascendant master composer. 'Low symphony'/'Songs from liquid days' – a return to representation.
56. Furmanovsky, Jill. 'Now it says here that if I press this switch...'. http://www.elephant-talk.com/	(C) documents the likeness of a practitioner	Using plasticity of tape. Method of process as art form. 'Edgar Wind, in his 1963 Reith Lectures, said: 'It might be argued that, in the last analysis, listening to a gramophone or tape recorder, or to any of the more advanced machines of electro-acoustical engineering, is like listening to a superior kind of musical clock' (Eno. 1996, p. 332).
57. Brian Eno and John Cage. 1985. <u>The Ambient Century</u> . By Mark Prendergast. London: Bloomsbury, 2000. Pp. 244-5.	(C) documents the likeness of a practitioner	Established lineage. 'By concentrating on behaviour rather than results, and process rather than product, Cage had helped to create a basis for dialogue between all the arts, a recognition that ideas held in common were more important than purely local differences of media' (Eno, Brian, and Mills, Russell. 1986, p. 42).

58. 'Heroes'.[Brian Eno, Robert Fripp and David Bowie.] http://www.elephant-talk.com/	(C) documents the likeness of a practitioner	Collaboration in music-making. The Beatles/songwriting partnerships/emerging collaborative process.
59. Robert Fripp. http://www.elephant-talk.com/	(C) documents the likeness of a practitioner	Emergent Individual method, Frippertronics/'Exposure'/Gabriel//DGM/application of technique and guiding principle/soundscapes.
60. Eno and Fripp's signal-delay system used for (no pussyfooting). <u>Brian Eno, his music and the vertical colour of sound.</u> By Eric Tamm. New York: Da Capo Press, Inc. 1995. P. 152.	(B) represents a methodology	Process/schematic as composition. Basis for empirical research methodology.

Evolving Trios 1900-2000

Duchamp

Cage **Paradigm shifters**

Eno

Von Uexkull

Fraser **Theories of nested temporalities**

Kramer

Debussy

Stravinsky **Melody, rhythm, and harmony**

Schoenberg

Schoenmakers

Mondrian **Trans-Atlantic practitioners**

Rothko

Plasticity

Hierarchy **Methodological [hermeneutic] interpretation**

Form

Orthogonist

Geometricist **Stylistic development**

Minimalist

Miles Davis/Bebop/Performance

Earle Brown/Improvisation/Appraisal **Interdisciplinary meme**

John Adams/Mobile form/Composition

Music Concrete/Varese

Found Voices/Reich **Holon manipulation**

Sampling/Eno

Found Phase Shifting/Its Gonna Rain

Phase Shifting /Clapping Music **Steve Reich**

Textural Phase Shifting/Music for 12 Musicians

Gurdjieff

Bennett **Methodology**

Fripp

General collaboration

Specific collaboration **Brian Eno**

Production

Les Paul

Jimi Hendrix **Application of electric guitar technology**

Robert Fripp

John Cage

Earle Brown **Proto-minimalists**

Morton Feldman

Appendix 13: Evaluation of artefacts

Four Times Scores

- I. something will be found
- II. three textures [colour score]
- III. umwelt [musique concrete] (Britten Em9 chord)
- IV. metre made

Title for suite: 'Four Times'

composition initially structured around harmonic progression - problematic because of absence of rhythmic/metric cells to provide fluidity

options:

- 1-explore additive rhythm (glass); or
- 2- explore phasing (reich);
- 3-allow piece to develop in arrangement adapted from solo guitar piece.
- 4-use mobile form to restructure.
- 5-develop rhythmic cells
- 6-African triplets

Also: 'problem' of melody - keep/adapt/discard?

chord sequences:

- 1) Cmaj7/Bm7/Em9/F9+7/F#sus4/F#//
- 2) Em/D/Dm/C/Dm/Am/Dm/Am/Em//
- 3) Em7+9

develop title: 'stasis I, motion, stasis II'

now:

uni- now

bi -now

tri- now

nested cells

HPF videos and audio

diagram of slide projection process

detailing:

image generator (laptop)

projector

screen wall

performance position

camera

audio monitor

recording media (DAT)

compare with Philips Pavilion?

Compare colour/image movement considerations? (Treib p. 49 - 'Since the projectors would be fixed- and this was before the era of zoom lenses-all movement and variation in size had to be accomplished in the filming.')

Notes on Tempomorphilation

17:1:2002

Dual composition process of providing piece for NME and pursuing unilateral recording of soundscapes

Recordings processed from DAT using BIAS PEAK software on Apple Macintosh i-Book

Process:

Editing
dynamic filter hiss cut
shelf eq high cut
compile and edit
parametric EQ high cut
save
burn CD

Tracks:

metre made
delay piece
two loops
study
maybe
hypermeasure

Tempomorphilation: overall descriptive title, possibly influenced by McLuhan publication with photographs and slogans.

Process suggested by Ben Jarlett: approach the character of noise in each track as a reason to edit tracks together, with additional hiss reduction applied to tracks copied and pasted together.

Is there an issue of temporality resulting from quantization?

Aesthetic process: adapting material for use in situations with differing temporal criteria i.e. Metre Made for New Music Ensemble.

The intention of this area of study is to gain assessment criteria through a process of comparative evaluation. This piece became the focus of a comparative methodology.

One priority is to consider evaluation with reference to public time.

The piece has a focus of repeated simple metre, shared and contributed to by individual instruments.

What differences may be observed in social (and therefore public) factors surrounding and dictating aspects of a piece for ensemble, compared with the temporalities of a single individual?

Repeated ostinato in piano part: a contiguous, separate temporality emergent from shared temporality public time of piece, operating parallel to and independently of metric body.

Does the operation of this emergent temporality impact on the performance of members of the ensemble, and if so, how?

If error occurs in performance of metric value, how much is this attributable to the emergent contiguous temporality?

Consideration of graphic material representing compositions. Conventional score reflects temporal values i.e. a number of individuals operating by necessity in a shared temporality.

Graphic representation of tempomorphic pieces available from screen sets of Bias Peak data.

Such communication (information via graphic representation) is unnecessary with a single individual.

Reference found today (18:1:02) to Geomorphology the study of the form of land.

Notes on Metre Made

Metre Made has been written as part of a series of pieces, following Colin Rileys suggestion, to complement Something Will Be Found.

These compositions (providing material for postgraduate research) set out to address aspects of the perceptual cognition of temporal hierarchies in the experience of music, with particular attention to the way in which subjective (personal) time relates to objective (public) time. Each composition employs a perceived criteria of temporal representation as a starting point, reflecting a minimalist style.

The compositional focus of metre made, as the title suggests, is to explore the representation of metre while executing a chord sequence.

The problematic representation of the opposite of perceptual time atemporality is represented by a three chord ostinato introduced halfway through the piece.

Something will be found

A representation of six nested temporal hierarchies for tuned percussion, strings and wind

Rob Doyle

This piece forms part of a research project exploring the relationship between perceived temporalities and their representation in the experience of music.

The title is taken from an Oblique Strategy 'Once the search is in progress, something will be found' (Brian Eno and Peter Schmidt, 1975).

The six temporal hierarchies reflected in this piece are:

1. Atemporal
2. Prototemporal
3. Eotemporal
4. Biotemporal
5. Nootemporal
6. Sociotemporal

The biotemporal is represented by the opening ostinato (scored for piano, but can be played on any tuned percussion instrument). It is suggested that any understanding of alternative temporalities will necessarily commence from the biological viewpoint of our species, and progress forwards (towards the sociotemporal) and backwards (towards the atemporal) from this bipedal point.

An element of improvisation may prove interesting to include, based upon the rhythm of the biotemporal ostinato, between, for example, bars 65 and 91. This might be desirable to achieve additional textural and dynamic energy, as well as commitment in performance.

Dynamics to be decided during rehearsal.

The style of this piece probably finds most parallels with some kind of 'Minimalism': a handy copy of a Rothko painting might be useful as a visual reference!

2:10:00 Brunel New Music Ensemble

structure

The representation of six nested temporalities provide the underlying building blocks for this piece.

Each temporality is represented as follows:

- Atemporal = D
- Prototemporal = D/E
- Eotemporal = eeee
- Biotemporal = 2 bar rhythmic motif : [daddadadaddadda]
- Nootemporal = use of 13 bar cells
- Sociotemporal = Arpeggiated chords

Structure : cells of 13 bars

Therefore:

13, 26,39,52,65,78,91,104.

- Atemporal D
 - Prototemporal D/E
 - Eotemporal eeee
 - Biotemporal 2 bar rhythmic motif : [daddadadaddadda]
 - Nootemporal 13 bar cells
 - Sociotemporal Arpeggiated chords
- Notes for 'Something will be found'**

Enclosed are parts for

- Violin 1
- Violin 2
- Flute
- Viola [untransposed part included]
- Tenor sax
- Tuned percussion [marimba/piano/mallet instruments]
- Cello
- Bass
- Alto sax [untransposed part included]

Viola and Alto sax parts might be doubled by **a.n. other instrument** - additional untransposed parts provided

Tenor sax part is Viola part

Guitars might play :

- 10) Violin I
- 11) Tuned percussion

Guitar and bass detune bottom string to D : substitute low D's at will, rhythmically

Sax parts are in sharp keys because Sibelius decided it - sorry

Flute : breaths/phrasing = where appropriate to maintain 2-bar rhythm

Three Textures	
22:3:01	
Chords	
Chords + melody	
Arpeggio + melody	
Repeat	
Em	
Spatial riff	
F#	
Arpeggio + melody	
F# cycle	
Coda	

Observations

Mobile Form

Attainment of mobile form. Mobile form has precedence in the work of Stockhausen and Adams, and, when characterised by the sculptures of Calder, represents a musical 'problem' of particular relevance to investigations of music and the ordered flow of time music might evoke/represent. 'Mobile' is understood to mean through-composed cells, the order of which can be determined at or immediately prior to the performance event. In the course of empirical research, a methodological approach has developed in which 'Mobile' has come to mean [be characterised by] an open-minded [indeterminate?] attitude to sequential structure, eschewing reliance on structural narrative and instead focussing on complementary or contrasting textural and timbral characteristics. The Cyclic form of a 12-bar blues appears to represent an adaptable and hardy 'mobile' form. A third mobile form is apparent in the reinterpretation of material (originally developed by Eno and Bowie) by Glass, and which is perhaps better described as arrangement. The most successful mobile form achieved was by elongating recorded material through a process of granular synthesis.

Moments

Using delay in performance allows the performer to evaluate the generated event. Evaluation provides criteria for decision-making. The performer is responsible for the decision and the event which follows. A process loop based on event/evaluation/decision/action/event becomes evident. This process loop represents an extended moment of engagement, or presence. The moment of engagement may be extended from the immediate psychological (3 seconds), to the performance process loop, and then to include greater durations providing the basis for perceptions of a greater present moment or a long now.

Interdisciplinary Impact

C20th Art (Taschen) pp. 477-9
Biomorphic sculpture (Barr, 1936)

Bergson theories link evolution to creative thought.

Herbert Read observations regarding futurism/constructivism: forms developed without/in contrast to orthogonal universal laws.

040519 notes on composition.

Compositional problem: evoking or representing stillness or non-movement using a time-based medium.

Successful use of drone: musical device with technological and biological links.

Simulated drone: the result a) of pantonal residual looping, or b) repetition of minute rhythmic patterns without cessation.

Additional 040521

music is vibrations in the air, therefore any vibration represents movement. No vibration=no time. Vibration has an inherent temporal factor.

040520 more notes on composition. Composition of vertical time music (vertical in the sense that velocity of motion is diverted as opposed to slowed?) is underpinned and informed by terminology and sensibilities borrowed from/rooted in: existentialism, minimalism, multidisciplinarity, study of time.

040331 conclusions. Texture/textural devices - loop, cycle, hypermeasure - evoke concepts of vertical, nonteleological time, in contrast to the goal-oriented, teleological time evoked by, e.g., the motif in sonata form progression; musical developmental focus shifts away from pitch to pulse (reich), rhythmic phrase/measure/cell (glass), and looped hypermeasure (eno/fripp)affording a greater exploration of electro-acoustics in emergent situations, environments or umwelts.

Nme-challenge to 1st violin convention - (absence of temporal landmarks?).

Becalmed - no movement, or sense of movement, a perceived threat to life.

Repetition - the beholder's share.

Objective (least subjective) descriptive identification of objects are by dating/timing, therefore an event can only be defined by it's temporal point of commencement and subsequent duration of process. Considerations of rhythmic tempo - both the internal rhythm of the process and the relationship between the internal rhythm of the process and external rhythms of the contextual environment - are relative and variable depending on perceptions of the observer, and provide inconclusive evidence for evaluation, except in providing an example of nested temporality.

Multidisciplinary sensibilities and terminology inform analysis and debate.

Developing technology impacts on process methodology and availability, and increases examples of nested temporalities.

List of audio procedures

Process 1:

010501 Additives II DAT zion guitar + smpte code

010418 additives/metre made
 010418 maybe
 010418 discipline
 010418 hammered
 010418 three textures
 010418 metre made
 010501 hammered DMC
 010501 discipline
 010501 three textures
 010501 maybe DMC
 010501 three textures + OD
 010501 Hammered + OD
 010501 Maybe + OD
 010501 Discipline + OD
 010501 Discipline
 010501 Maybe (vibe)
 010501 Hammered (delay)
 011006 Madonna solo guitar
 011006 Ennui solo guitar
 011006 Fetch Miller solo guitar
 011006 3/4 solo guitar + rhodes
 011006 ronce
 011006 df9
 011006 mad (two guitars)
 011006 ennui (two guitars)
 011006 fetch miller (two guitars)
 011006 3/4 (two guitars)
 011006 ronce (two guitars)
 011006 df9 (two guitars)

Process 2:

020123 Soundscapes: tempomorphic studies.

020123 1-'diminished space' (delay)
 020123 2-'a semitone' (delay)
 020123 3-'bound'(loop)
 020123 4-'hanging' (delay)
 020123 5-'between a third' (delay)
 020123 6-'growing, there'. (delay)

Process 3:

020607 Darkroom Reduced process DAT

020607 jamman loop arpeggio + improvisation
 020607 jamman loop (syncopated ostinato) + harmonies
 020607 jamman loop (funky arpeggio) + other ostinati
 020607 jamman loop (descending glory) + harmonics with delay
 020607 sequence in D, looped with overdubs

Process 4:

020918 August CD Cycle and hypermeasure

020918 let it slide
 020918 ennui
 020918 in country
 020918 B groove
 020918 study in thirds
 020918 chill Bb
 020918 f sharp

Process 5:

021126 Granular Synthesis CD Extended cycle and hypermeasure

021126 B groove

021126 Ennui
 021126 F sharp
 021126 Chill Bb
 021126 Let it slide

Process 6:**021208 110 BPM DAT**

021208 110 BPM 3 OD loops + solo (Gibson 335+GPI00+jamman+SR16)
 021208 110 BPM let it slide (Gibson 335+GPI00+jamman+SR16)
 021208 110 BPM F sharp techno (Gibson 335+GPI00+jamman+SR16)
 021208 110 BPM B groove (Gibson 335+GPI00+jamman+SR16)
 021208 110 BPM Pan delay S.S. (Gibson 335+GPI00+jamman+SR16)

Process 7:**021218 Video tempomorphics**

021218 1a long tone introduction/drone/short loop duration/pandiatonic/change at 6:53
 021218 1b Loop: fast run loops/with fractures/change at 4:28
 021218 1c Delay: scratch/low tone growth/8 note ascend-descend arpeggio/with doubling/harmonics/slow chords/distorted high descending guitar/low short glissandi/resolving chord wash, fading
 021218 2 (filmed in the studio)

Process 8:**030201 Hierarchy, plasticity and form audio**

HPF 1a
 HPF I
 HPF II loop
 HPF III delay + loop
 HPF IV delay

Process 9:**030301 MIDI synchronised loops: Jamman, DMC, GPI00. DAT**

030301 arrondissement: synchronised loops, Jamman, DMC, GPI00.
 030301 afro-groove: synchronised loops, Jamman, DMC, GPI00. chord cycle I/VI/IV guitar solo
 030301 cool latin film music (song?)

Process 10:**031222 Dog Solitude (music to make films to)**

031222 panned pantonal arpeggios
 031222 3 tones
 031222 EA funk sample and improv
 031222 descending delay (Vinni Riley)
 031222 familiar metre
 031222 delay piece I
 031222 delay piece II
 031222 light
 031222 tinganting
 031222 strobe party
 031222 overpass

01/2 Sibelius versions

020101 metre made
 000201 something will be found
 000201 something will be found piano

Tempomorphics

1998 Original hypermeasure (digital processing compressed to analogue Revox two track tape)
 000904 Temporphic study in A (spatial improvisation)
 000310 Two loops (empirical textural composition)
 000310 Delay piece (empirical textural composition)
 010418 Metre made I (textural focus of performance delay makes adapted use of harmonic material)
 010418 Maybe (tempomorphic performance with basic unit of predefined arpeggio sequence)
 010418 Discipline (to provide a foundation for technique and formal structure)
 010418 Hammered (applied 'discipline': demanding a technique sublimated to repetition)

Audio processes

010501 Additives
 020123 Soundscapes
 020607 Reduced process
 020918 August: cycle and hypermeasure
 021126 Granular synthesis: extended cycle and hypermeasure
 021208 110 BPM
 021218 Video Tempomorphics
 030201 Hierarchy, plasticity and form audio
 030301 MIDI synchronised loops
 031222 Dog Solitude

Evaluation of audio artefacts**Process I: 010501 Additives II DAT zion guitar + smpte code**

'Additives' is a term used to address performance featuring additional processing, especially delay. It is an umbrella term which also covers such additional processing as loops, drum machine (DMC), and overdubs. This phase of recordings are characterised by a range of predetermined compositional content, often based on the application of modular cell structures. A particular playing technique (Hammered, Three Textures), or perceived stylistic interest (Discipline, Maybe) have also been jumping-off points. Explorations of the pieces were made as different approaches were recorded for evaluation. Some explorations highlighted strengths and weakness of the initial ideas, but more often than not, the initial ambience, energy and interest of pieces were diluted or lost altogether. Where a concise proposal was followed, such as the addition of a second guitar part, to make a 'duet', the dimension of the piece expanded to display a different, new character. In the example of 'Fetch Miller', the second part plays two pitches in an attempt to emulate the style of Glass, and succeeds in adding tension and urgency to the whole. The evaluation of this favours reduction and (and possibly deconstruction) of process, and an increasingly minimalist sensibility. This 'additives' phase is now seen as a stepping stone on the way to developing the methodology of the 'immediate artefact'.

Darkroom Discipline CD

(from 'additives I' DAT, 010418, and 'additives II' DAT 010501)

Recorded on analogue multitrack, with overdubs

'ronce' 6:34 (eno chord sequence from 'taking tiger mountain by strategy' -C,G, Am,F-/content for processing manipulation [but not 'complete' because no interest other than cyclic movement] repeated cycles of harmonic movement /repeated moments - require unifying narrative?)

'additives/metre made' 10:39 (textural focus of performance delay makes adapted use of harmonic material)

'original hypermeasure' 13:35 [delay to Revox]

'discipline 2' 5:52 (through-composed, structured piece)

'three four' 5:21 (deconstructed keyboard composition)

'hammer' 5:09(through-composed gamelan-type modular cycles, technique-dependent/tribute to Reich)

'ennui' 4:59 (exploration of conventional harmonic texture & structural development, using 'static' arpeggiated ostinato for basic unit)

'fetch miller' 4:41 (exploration of theme by Dominic Miller)

'madonna' 5:57 (exploration of conventional harmonic development and structure with a basic unit of Am/9 with descending chromatic figures)

'df9' 2:59 (arpeggiated chord sequence with additional held feedback tones, progressing to stasis).

Process 2: 020123 Soundscapes: tempomorphic studies.

This phase is a) a reaction to the over-complexity of process present in 'additives'; b) an application of empirical assessment after viewing video of the performance at the Liminal conference, 2000; and c) an application of characteristics of tempomorphic performance suggested in the course of research. The combined observations made from these factors were applied to the generation of a 'basic unit' of practical methodology. A conscious effort/intention was made to note processes and intentions of each piece, reflected in the title of each. 'Complete' sounding textures emerge when less concern is given to 'parts', and more to the sounds made as they are made, especially when delay is used.

1-'diminished space' (delay/responsibility for every action)(slow/hesitant/expansive cycles/slowly building dynamic contours/used for HPF)delay regeneration fade

2-'a semitone' (delay exercise in keeping in time/maintaining temporal stasis/high harmonic overtones apparent after 1.5 minutes/random & irregular phase shifting-one listens to phase fluctuations and the hyper measure rhythm of the harmonic overtone clusters/Reich phasing precision) delay regeneration fade

3-'bound'(loop/1st figure: high indistinct ostinati figure/2nd figure: cyclic arpeggio/rooted by 3rd figures: low almost metric glissandi/4th figure: random harmonic chronons/pandiatonic/cyclic stasis)quick fade disappear end to low loop.

4-'hanging' (delay)(violining delay high swelling drone/mid-range string-damped note additives to delay loop, ascending in slowly-apparent process [once process starts, structure is defined-structure is defined by process]/resultant metric emphasis changes)slow regeneration fade

5-'between a third' delay (grunge power chord/surprise arbitrary stops-silences-because performer and technology not in synch/stops create tension & dynamic effect/metre is unclear or chaotic rather than ambiguous) sudden end.

6-'growing, there'. (delay) (7 note arpeggio with gaps from anticipation of next cycle/emergent single-note harmonic/asymmetrical loop until entry of uniting 3 note figure followed by descending hammer arpeggio-impact of 'speeding up' tempo/pandiatonic/build up of additional ascending hammer arpeggio results in non-resolved asymmetric metre /emergent 'found' melody from interplay between loops/3 fast cells followed by a 'braking cell'/extended duration heightens incidence of resultant phrases) quick fade ending.

Process 3: 020607 Darkroom Reduced process DAT

These pieces have followed set criteria in their generation: once a loop or set of loops have been recorded, they are played with a live 'uniting' part. All parts are performed with a deliberate intention to restrict textural variation, and keep a 'reductionist' sensibility. Where predefined material has been used, it is not as a formal sequence, but to provide material for a loop (arpeggio + improvisation). The emphasis has been on empirically-developed material at the time of the session. Delay-textures have been avoided. The exception to the rule is 'sequence in D', a return to a predefined sequence used elsewhere in the project, this time arranged in loops which have been 'filled out' with empirically chosen textures.

Process 4: 020918 August CD Cycle and hypermeasure

Aim: to separate the composition from the process; to focus on cycles for use in mobile form; maximum reduction of processing and the generation of notated material for possible future development; a smaller version of NME pieces. Result: Notated pieces constructed from modular cells of cycles for mobility in structure, with metric ambiguity highlighted.

Process 5: 021126 Granular Synthesis CD Extended cycle and hypermeasure

Aims: explore application of granular synthesis software technology after introduction to it by Ben Jarlett (Brunel); perceived for use as a 'second generation' processor (for post-production application); having heard granular synthesis in action, source material with minimal information seems to be a likely choice for processing; the minimal processing involved in the August pieces seems appropriate. Result: radical alteration of character of material as the result of temporal parameter alteration (pieces are unrecognisable); reduced information of material results in distinctive Macthuga (fractal image) video sequence; future exploration of sound-to-visual media, especially how to capture? - does the process have to be a process: is the artefact a process?

Intermediate evaluation: darkroom discipline

Pieces are concerned with executing compositional material with musicianly 'discipline'.

The strength of the 'additive' recordings are equal to their composition and performance, with little room left for immediate positive response to the presenting medium: this is viewed as a weakness, as the recording process captures more than only composition and (traditional) performance - is there another, liminal, aspect to performance?

A sequence of chords is complemented by an additional textural ambience, often improvised, but with no processional relationship, therefore superfluous and leaving 'something missing'.

Pieces represent an exploration of compositional styles of Fripp, Reich and Glass, with high demand for performance precision + discipline.

Additional parts of 2 notes give 'minimalist' feel.

Resultant figures are crowded out by 'busy-ness'.

'Complete' sounding textures emerge when less concern is given to 'parts', and more to the sounds made as they are made, especially when delay is used. Slower tempi facilitate this. Pulse is discrete.

Additional subtractor is the tone of these pieces - enhanced in later pieces by 'situational empiricism' > This is achieved by improvisatory approach of HPF tempomorphics. (Which Doob time frame is in which?)

Compare to Dog Solitude pieces, which have a sense of 'completeness'.

Documented realisation of NME pieces hardest to achieve because of recording problems (rehearsal/preparation/event/venue/capture). Biggest composing/performance operation needing most resources.

August acoustic pieces involve least processing and least to go wrong.

Granular synthesis interpretations of august pieces highlight novelty of altered temporal perception - a temporal short-cut?

110bpm pieces: exploit technology of MIDI synchronised DMC/loops/preamp processor/immediate event capture/version of 'let it slide' = wide tonal spectrum (variety of simultaneous loops); digital precision between sequences mimics technical precision of 'darkroom discipline'; countermelody ideas fulfilled; pulse is concrete and unambiguous (unattractive?); effective compositional tool; sequential structure of event narrative issue: restructuring needed from further processing (like tone of darkroom discipline?); structure not irrefutable in temporal development like single event of improvisation-therefore highlighting its character as a series of moments? Is the 'complete' quality one of undeniable succession, with no feeling of momentary events? What of the 'incomplete' tone of darkroom discipline pieces?

Umwelt compilation offers method of evaluative comparison.

Hidden intention of 'darkroom' studio to treat recordings as developing pictures?

Each is discrete and complete?

Problem of representative description for each piece solved by chronological indexing? -temporal relation insufficient?

Fifth 110 piece, 'pan delay', is free of tempo - increased and refreshing temporal ambiguity?

Towards the Immediate artefact.

The 'completeness' of a piece is affected by the commitment of the performance to the time of the performance - if the performance is focussed on attempting to regenerate prior concerns, there is less commitment to the present, and less 'completeness' for the piece. The 'immediate artefact' possesses a closed loop structure of process, from commencement, through exploration, to completion. This aesthetic/creative time is focussed and complete. It has resonance with the piece as a developing picture, such as a work by Pollock or a photograph.

Evaluation of the Immediate artefact.

When a tempomorphic improvisation is recorded direct to DAT, that is the completed artefact. There is no mixing or overdubs to be added, no decisions to be made which might alter, improve or weaken the piece. It stands on its own merits as a piece of music, caught in time. Subsequent processing is possible, and frequently takes place - especially volume attenuation as the result of compression - but editing or additional aesthetic processing (as opposed to 'technical' processing to ensure successful transfer to CD) is gilding the lily, and adds a further layer of process for the original material to struggle through.

Process 9: 030301 MIDI synchronised loops: Jamman, DMC, GPI00. DAT

These recordings are a return to earlier (reduced process) material, addressing textural issues of balance and space, and the negation of narrative. The intention is to define and maintain an effective umwelt without narrative fluctuation, in which cycles merge and repeat with fluidity.

Findings taken from notes for empirical research.

A ten-stage process of investigation using heuristic principles culminated in a number of findings. Conclusions from the findings for each process, which were used to inform decisions relating to the next, are as follows:

Process I: Additives. The strength of the 'additive' recordings are equal to their composition and performance, with little room left for immediate positive response

to the presenting medium: this is viewed as a weakness, as the recording process captures more than only composition and (traditional) performance - is there another, liminal, aspect to performance?

Process II: Soundscapes. 'Complete' sounding textures emerge when less concern is given to 'parts', and more to the sounds made as they are made, especially when delay is used.

Process III: Reduced process. These pieces have followed set criteria in their generation: all parts are performed with a deliberate intention to restrict textural variation, and keep a 'reductionist' sensibility.

Process IV: August: cycle and hypermeasure. Notated pieces constructed from modular cells of cycles for mobility in structure, with metric ambiguity highlighted. August acoustic pieces involve least processing and least to 'go wrong' technically.

Process V: Granular synthesis: extended cycle and hypermeasure. The process is the artefact: reduced information of material results in distinctive Macthuga (fractal image) video sequence; future exploration of sound-to-visual media, especially with regard to capture - does the process have to be a process: is the artefact a process?

Process VI: 110 BPM. Structures are not irrefutable in temporal development, like the single event of improvisation - does this emphasise the structural character as a series of moments? Is the 'complete' quality one of undeniable succession, with no feeling of individual momentary events?

Process VII: Video tempomorphics. A visual document of tempomorphic performance: issues of narrative are highlighted. A springboard for visual experimentation regarding the relationship between music and visual images.

Process VIII: Hierarchy, plasticity and form. A sequence of performances addressing multiple issues of the research project, in particular process development, including diagrammatic representation and questions of the relationship between the close-up and the overall picture, both figuratively and cinematically.

Process IX: MIDI-synched loops. The intention to define and maintain an effective umwelt without narrative fluctuation, in which cycles merge and repeat with fluidity establishes a set of criteria with which to evaluate progress.

Process X: Dog Solitude. The title is taken from a William Gibson science fiction story, ('Neuromancer'). The reversal of roles in the creative process. The generation of soundtrack material with the intention of shooting video/providing imagery for a future audio-visual piece.

General Observations

General observations regarding the course of practical research begin with that stage which combined research findings and seemingly offered a methodology for universal application within the project: Process XIII 'Hierarchy, plasticity and form'. A result of this aspect of research has been a concern with narratives. This is perceived as an issue arising from the way the HPF methodology grew from the need to order iconographic research findings. With the development of Process VIII, empirical observations regarding hierarchies have been of particular interest. Hierarchies have been found to be present in conventions of notation: pulse, metre, hypermetre (nested hierarchies); there is a precedence in the religious roots of western notation; they reflect social and possibly military structure; some are nested temporal hierarchies; they are present in frequencies - higher-pitched melodies supported by lower-pitched substructures; they can represent perceived rules for evaluation and process, leading to a consideration of The Long Now.

A further impact of the practical research on the evaluation and development of solo recorded procedure is the move towards the 'immediate artefact'. The prior development and subsequent application of tempomorphic characteristics supplied a set of criteria with which to develop a practical approach to music-making for the investigation. It seems a characteristic of the ten processes that an increasingly limited, or minimal, set of criteria brought increasingly focussed results.

The issue of capture raised as the result of experimenting with fractal imaging, after Process V, foregrounded an issue pertinent to digital video arts in general:

'The most serious and persistent problem facing video as a medium is that one cannot hold a tele-visual image in one's hands and one cannot hang it above one's sofa. It shatters our perception by the shock of its momentary transmission, but offers no bodily resistance. "Our problem," writes [Fred] Forest, "is no longer that of Classical art - the beholding of an object - but rather the dynamics of the emergence of the object!" (Fricke. 2000, p. 596).

The dual problems of holding an artefact in one's hands and the dynamics of the emergence of the object are similar to those described by Earle Brown: 'I used to envy painters very much because they had their work in their hands, so to speak. They could see it. When you've done it, it's in real form. Writing music you don't have the real thing. All you have are symbols' (Bailey. 1992, p. 62).

Throughout the empirical research procedure, an awareness of the frames of temporal reference described by Doob - of the creation, of the communication, and of the inherent temporal reference of the artwork, 'the interval actually portrayed in the art itself' (Doob. 1971, pp. 377-9) - helped to inform and focus the direction taken. Steve Reich, in his revised Writings on Music has pointed to the potential for temporal focus: 'Music Dance Theatre Video and Film are arts in time. Artists in those fields who keep this in mind seem to go further than those mainly concerned with psychology or personality' (Reich. 2002, p. 81). The attempt to equate extracts from the research pieces with the six umwelts, from atemporal to sociotemporal, offers a useful method of evaluative comparison with the interval portrayed in the art itself.

Is there a hidden intention of using a home sound studio given the name 'darkroom' to treat recordings as developing pictures? Brian Eno's description of the impact of the 'hidden intention' describes the taped music as having become a malleable material to which Eno can relate 'the way a painter relates to a painting' (Eno and Mills. 1986, p. 96). In Eno's view, the hidden intention is interpreted as all that is recorded, or every brushstroke, which 'even if it is painted over and hidden [...] must leave a trace - and history is the gradual accumulation of such traces' (Eno and Mills. 1986, p. 96).

The attraction of escaping from meaningless representative titles for compositions and tempomorphic performances by using chronological indexing is logical. However, without associative words to stimulate memory, is an identification based entirely on a chronological relationship to the piece sufficient?

In the course of stage VI, in which the intention was to play several pieces to an identical pulse of 110 bpm in order to evaluate whether a piece could sound faster or slower while actually at the same tempo, a fifth piece 'pan delay', suggested itself and was recorded, comparatively free of tempo. Does this indicate an

occasional desire to escape from ordered temporality, to be refreshed in temporal ambiguity?

An Index of umwelts: evaluative statements.

Once engagement has been established between the practitioner and the medium, an altered perspective of composition and performance emerges.

The practical survey of available approaches with which to explore nested temporalities is characterised by either pre-composed pieces, or improvised explorations of sonic texture (using processing devices). At the outset of the survey, conscious research intentions played a part in guiding pre-composed pieces, which were complemented by a (largely intuitive) series of soundscapes.

The most important single indicator to emerge from the preliminary series of recordings is exemplified in the segue (or 'becoming') from 'additives' to 'metre made', which focussed the performance on the immediate environment afforded by processing devices. This indicator suggested a reappraisal of practical research so far, and the direction of subsequent efforts; it also caused a re-evaluation of intuitive textural exploration.

Process I is characterised by the exploration of multiple intentions: these intentions include compositional approaches based on criteria of medium manipulation (multi-tracking), instrumental technique, and harmonic development.

In comparison with the single intention reflected in medium-based pieces ('study', 'hypermeasure'), the presence of multiple intention appears problematic.

The adoption of a single intention of process was applied to subsequent processes, and these supply the sub-title of each.

An intention of exploring harmonic material was to feed into through-composed notated compositions.

Features of Process I include an exploration of methodological factors depending on technique, multitracking, and development of harmonic material. Reflections on a variety of applied processes show the first indications of an emergent 'immediate artefact' methodology, best signified by the methodological developments associated with 'metre made'.

These pieces represent the results of a search for a suitable methodology to address the idea of six umwelts (atemporal, prototemporal, eotemporal, biotemporal, nootemporal and sociotemporal) discussed in the thesis accompanied by these recordings.

Selection of pieces to represent a specific umwelt governed evaluative criteria: the attempt to identify relative temporal movement, distinct on six levels, necessitated the development and application of additional or refined compositional processes.

At commencement, a potential focus on performance, composition or audition was unknown.

The decision was made to generate pieces that would correspond with each temporality.

A retrospective compilation of selected research compositions corresponding to each umwelt comprises '6 umwelts', and form a medium-based evaluation of this practical aspect of the survey.

The potential impossibility of representing an absence of temporal movement has been perceived as a challenge to the medium.

Process I

1: 'discipline' borrows its title from Fripp, and depends in its execution on rigour of instrumental technique after the example of Reich.

2: 'df9' explores conventional local harmonic movement.

3: 'hammered' depends on performance technique for its exploration of an extended lateral harmonic moment. An early pointer to the immediate artifact. Additional semitone accompaniment is the exploration of a Glass-style textural device.

4: 'madonna' also uses the Glass device in a multi-tracked environment. Harmonic material features multiple drone 'areas'.

5: 'fetch miller' develops a theme by Dominic Miller, again with the use of semitone ostinati for accompaniment.

6: 'ennui' addresses harmonic texture using arpeggiated ostinati to evoke long uniform moments.

7: 'additives' follows a pre-composed progression dependant on delay for performance.

8: 'metre made' reworks a harmonic progression featuring harmonic 'ambiguity', made complete through the exploitation of processing devices in performance. The most persuasive indicator for subsequent approaches to process. Basis of material for through-composed ensemble piece 'metre made'.

9: 'threefour' explores the blues triplet hemiola, multitracking, and local moments.

10: 'three textures' is technique-dependent, following a harmonic sequence dissolving into an attempt at metreless drones providing a backdrop for 'free' improvisation.

11: 'ronce' explores harmonic repetition (of a I,V,VI,IV chord cycle) as a means to extend duration.

Recordings processed from DAT using BIAS PEAK software on Apple Macintosh i-Book

Subsequent processes, informed by the preliminary methodological investigation, are defined by their sub-titles, and focus on one or more areas suggested by the explorations of Process I, and the soundscapes compiled as 'Tempomorphilation'.

Process II: Soundscapes, focusses on using a defined process.

Process III: Reduced Process, features reduced improvisation accompanied with unadorned loops.

Process IV: August: Cycle and hypermeasure continues a reduction of process, focussing on the exploration of cycles and moments presented on solo acoustic guitar. This part of the survey, exploring harmonic material, supplied notated scores from which to potentially develop ensemble pieces.

Process V: Granular synthesis, applies a time-based digital process, based on extending durations, to Process IV.

Process VI: 110bpm addresses the personal interface between public and private time.

Process VII: Video tempomorphics addresses the documenting of an 'intuitive' performance, adding a further (visual) element to the process.

Process VIII: Hierarchy, plasticity and form represents the point at which the practical and theoretical elements of the investigation merge, and feed back to each other.

Process IX: MIDI synchronised loops returns to public-time metre accompanied by private-time improvisation, with increased textural elements.

Process X: Dog Solitude is a reversal of Process XIII, using, as a compositional aim, the idea of evoking non-specific temporalities in a film yet to be made.

Six Umwelts comprises: a through-composed piece; a selection from Process VI; a selection from Process I; a selection from Process IV; a selection from Process V; and a selection from Process XIII.

Umwelt		Process Title	Notes/media	Title
Atemporal	1	XIII: Hierarchy, plasticity and form improvisations	Improvisation complemented by projected slides	HPF IV (16:17)
Prototemporal	2	V: Granular Synthesis	MaCthuga visual complement/software	F sharp 14 (5:32)
Eotemporal	3	I: Additives	composition	Discipline (2:40)
Biotemporal	4	IV: August: cycle and hypermeasure	Compositions for Solo Acoustic performance	Ennui (3:49)
Nootemporal	5	VI: 110 BPM	Studio Based improvised composition loops + drum machine	3 overdubbed loops and solo (5:29)
Sociotemporal	6	Tempomorphic compositions: Something Will Be Found	Scored for indeterminate ensemble	Something will be found (4:18)

[illegible]

一、
 二、
 三、
 四、

4



I

五

4

五

五

三

I

Something will be found

Rob Doyle

$\text{♩} = 120$

5

Flute

Oboe

Alto Saxophone (concert pitch)

Tenor Saxophone (concert pitch)

Tambourine

Xylophone *pp*

Piano *pp*

Violin I (8) $\text{♩} = 120$ pizz *pp*

Violin II (6)

Viola (4)

Violoncello (2)

Double Bass (1)

==

A

10

15

Fl.

Ob.

A. Sax.

T. Sax.

Tamb.

Xyl.

Pno.

Vln. I

Vln. II

Vla.

Vc.

Db.

pp

pizz

ff

20 25 **B**

FL

Ob.

A. Sax.

T. Sax.

Tamb.

Xyl.

Pno.

Vln. I

Vln. II

Vla.

Vc.

Db.

mf

ad lib accents

pp

ff

30 35

FL

Ob.

A. Sax.

T. Sax.

Tamb.

Xyl.

Pno.

Vln. I

Vln. II

Vla.

Vc.

Db.

pp

C

Fl. *mf*

Ob.

A. Sax. *ff*

T. Sax.

Tamb.

Xyl.

Pno.

Vln. I

Vln. II *ff*

Vla. *ff*

Vc. *ff*

Db. *ff*

D **E**

Fl. *mf* *ff*

Ob.

A. Sax. *ff*

T. Sax.

Tamb.

Xyl.

Pno.

Vln. I *mp*

Vln. II *mp*

Vla. *mp*

Vc. *pp*

Db. *ff*

Fl. ⁵⁵ ⁶⁰

Ob.

A. Sax.

T. Sax.

Tamb.

Xyl.

Pno.

Vin. I

Vin. II

Vla.

Vc.

Db.

pp



Fl. ^F ⁶⁵ *mf*

Ob.

A. Sax. *mf*

T. Sax.

Tamb.

Xyl.

Pno.

Vin. I ^F

Vin. II

Vla.

Vc.

Db.

FL. 75 **G** 80

Ob.

A. Sax.

T. Sax.

Tamb.

Xyl.

Pno.

Vin. I **G**

Vin. II

Vla. *pp* *mf*

Vo. *pp*

Ob. *ff*

FL. 85 *mf* *ff*

Ob.

A. Sax. *mf* *ff*

T. Sax.

Tamb.

Xyl.

Pno.

Vin. I

Vin. II

Vla. *pizz* *mf*

Vo. *pp* *arco*

Ob. *pp*

[H]

Fl. 80

Ob.

A. Sax.

T. Sax.

Tamb.

Xyl.

Pno.

Vln. I

Vln. II

Vla.

Vc.

Db.

ff *f*

==

Fl. 100

Ob.

A. Sax.

T. Sax.

Tamb.

Xyl.

Pno.

Vln. I

Vln. II

Vla.

Vc.

Db.

pp *f*

Metre Made

Rob Doyle

Flute *mp* $\text{♩} = 88$ 110

Oboe

Alto Saxophone

Tenor Saxophone

Tambourine *mp*

Xylophone

Piano *mp*

Violin I (8) *mp* $\text{♩} = 88$ *arco*

Violin II (6)

Viola (4)

Violoncello (2)

Double Bass (1)

Fl. 115 120

Ob.

A. Sax.

T. Sax.

Tamb.

Xyl.

Pno.

Vln. I

Vln. II

Via.

Vo. *arco* *mp* *pizz*

Db.

125

Fl.

Ob.

A. Sax.

T. Sax.

Tamb.

Xyl.

Pno.

Vin. I

Vin. II

Vla.

Vc.

Db.

130

135

Fl.

Ob.

A. Sax.

T. Sax.

Tamb.

Xyl.

Pno.

Vin. I

Vin. II

Vla.

Vc.

Db.

This musical score page contains measures 145 through 150. The instruments and their parts are as follows:

- Fl. (Flute):** Measures 145-146 feature a melodic line with dynamics *mp* and *mf*. Measures 147-150 are marked with a fermata.
- Ob. (Oboe):** Similar to the Flute, it has a melodic line in measures 145-146 with *mp* and *mf* dynamics, followed by a fermata in measures 147-150.
- A. Sax. (Alto Saxophone):** Remains silent throughout the measures.
- T. Sax. (Tenor Saxophone):** Plays a rhythmic pattern in measures 145-146, then rests in measures 147-150.
- Tamb. (Tambourine):** Provides a steady eighth-note accompaniment throughout measures 145-150.
- Xyl. (Xylophone):** Plays a melodic line with a crescendo in measures 145-146, then rests in measures 147-150.
- Pno. (Piano):** Features a complex melodic and harmonic texture in measures 145-146, then rests in measures 147-150.
- Vin. I (Violin I):** Measures 145-146 have a melodic line with a crescendo. Measures 147-150 are marked with a fermata and *pp* (pianissimo).
- Vin. II (Violin II):** Measures 145-146 are silent. Measures 147-150 play a sustained note with a fermata and *pp* dynamic.
- Vla. (Viola):** Measures 145-146 are silent. Measures 147-150 play a sustained note with a fermata and *pp* dynamic.
- Vc. (Voice):** Measures 145-146 are silent. Measures 147-150 play a melodic line with a fermata and *pp* dynamic.
- Db. (Double Bass):** Measures 145-146 are silent. Measures 147-150 play a sustained note with a fermata and *pp* dynamic.

155

FL *mp*

Ob.

A. Sax.

T. Sax.

Tamb.

Xyl. *pp*

Pno. *pp*

Vln. I

Vln. II

Vla.

Vc. *mp*

Db.

pizz

==

160

FL

Ob. *mp*

A. Sax.

T. Sax. *mp*

Tamb.

Xyl.

Pno.

Vln. I

Vln. II

Vla.

Vo.

Db.

165

Fl.

Ob.

A. Sax.

T. Sax.

Tamb.

Xyl.

Pno.

Vln. I

Vln. II

Vla.

Vc.

Db.

mp

170

175

Fl.

Ob.

A. Sax.

T. Sax.

Tamb.

Xyl.

Pno.

Vln. I

Vln. II

Vla.

Vc.

Db.

mf

Musical score for measures 175-184. The score includes parts for Flute (Fl.), Oboe (Ob.), Alto Saxophone (A. Sax.), Tenor Saxophone (T. Sax.), Tambourine (Tamb.), Xylophone (Xyl.), Piano (Pno.), Violin I (Vln. I), Violin II (Vln. II), Viola (Via.), Voice (Vo.), and Double Bass (Db.). The key signature is one sharp (F#). The tempo is marked 180. Dynamics include *mp*, *pf*, *p*, *mf*, and *f*. The score features complex melodic lines for the woodwinds and strings, with a steady rhythmic accompaniment in the percussion and piano.

Musical score for measures 185-194. The score includes parts for Flute (Fl.), Oboe (Ob.), Alto Saxophone (A. Sax.), Tenor Saxophone (T. Sax.), Tambourine (Tamb.), Xylophone (Xyl.), Piano (Pno.), Violin I (Vln. I), Violin II (Vln. II), Viola (Via.), Voice (Vo.), and Double Bass (Db.). The key signature is one sharp (F#). The tempo is marked 185. Dynamics include *pp*. The score features complex melodic lines for the woodwinds and strings, with a steady rhythmic accompaniment in the percussion and piano.

Umwelt

Rob Doyle

$\text{♩} = 92$ [on repeat, play differently]

190 195

Flute

Oboe

Alto Saxophone

Tenor Saxophone

Tambourine

Xylophone

Piano

[on repeat, play differently]

$\text{♩} = 92$ [on repeat, play differently]

Violin I (8)

Violin II (6)

Viola (4)

Violoncello (2)

Double Bass (1)

pp

arco

pp

arco

pp

pp



200 205

Fl.

Ob.

A. Sax.

T. Sax.

Tamb.

Xyl.

Pno.

Vn. I

Vn. II

Via.

Vo.

Db.

pp

div.

aliss.

div.

aliss.

Fl. 200 210 215 J

Ob.

A. Sax.

T. Sax.

Tamb.

Xyl.

Pno. *mf*

Vln. I pizz arco *mf* J

Vln. II

Vla.

Vc. *mf*

Db. *mf*

div.

arco

pizz

K 220 L

Fl. *mp* *mf*

Ob.

A. Sax.

T. Sax.

Tamb.

Xyl.

Pno. *p* *mp* *mf*

Vln. I *p* *mp* *mf* L

Vln. II

Vla.

Vc. *p* *mp* *mf* *div. gliss.*

Db. *p* *mp*

225

230

Fl.

Ob.

A. Sax.

T. Sax.

Tamb.

Xyl.

Pno.

Vin. I

Vin. II

Vla.

Vc.

Db.

mf

p

ppp

gliss

Three textures: stasis, motion/stasis

Rob Doyle

J = 100

234 235 240

Flute *pp* *ff*

Oboe *pp* *ff*

Alto Saxophone *pp* *ff*

Tenor Saxophone

Tambourine

Xylophone *pp* *ff*

Piano *pp* *ff*

J = 100

arco

Violin I (8) *pp* *ff*

Violin II (6)

Viola (4)

Violoncello (2) *pp* *ff*

Double Bass (1)



M

Fl. *p* *pp* *mf*

Ob.

A. Sax. *p* *pp* *mf*

T. Sax.

Tamb. *12*

Xyl. *p* *pp* *mf*

Pno. *p* *pp* *mf*

M

Vln. I *mf*

Vln. II

Vla.

Vc. *p* *pp* *mf*

Db.

250

FL *mf*

Ob.

A. Sax. *mf*

T. Sax.

Tamb.

Xyl. *mf*

Pno. *mf*

Vln. I *mf*

Vln. II

Vla.

Vc. *mf*

Db.

=

255

FL *pp*

Ob.

A. Sax. *pp*

T. Sax.

Tamb.

Xyl. *pp*

Pno. *pp*

Vln. I *pp*

Vln. II

Vla.

Vc. *pp*

Db.

260

N

FL

Ob.

A. Sax.

T. Sax.

Tamb.

Xyl.

Pno.

Vin. I

Vin. II

Vla.

Vc.

Db.

pp

mp

arco

mp arco

mp



265

270

FL

Ob.

A. Sax.

T. Sax.

Tamb.

Xyl.

Pno.

Vin. I

Vin. II

Vla.

Vc.

Db.

FL. O

Ob.

A. Sax.

T. Sax.

Tamb.

Xyl.

Pno.

Vin. I O

Vin. II

Vla.

Vc.

Db.

275



FL. P

Ob.

A. Sax.

T. Sax.

Tamb.

Xyl.

Pno.

Vin. I P

Vin. II

Vla.

Vc.

Db.

280

ppp

ppp

m

m

gliss

ppp

ppp

\equiv

This musical score is for the piece "The Rose Tree" from the Broadway musical "Fiddler on the Roof". The score is written for a full orchestra and includes the following instruments and parts:

- Flute (Fl.):** Features a melodic line with dynamics *mp* and *mf*.
- Oboe (Ob.):** Mirrors the flute's melody with dynamics *mp* and *mf*.
- Alto Saxophone (A. Sax.):** Provides harmonic support with dynamics *mp* and *mf*.
- Tenor Saxophone (T. Sax.):** Remains silent throughout this section.
- Tambourine (Tamb.):** Plays a rhythmic pattern marked with a 12/8 time signature.
- Xylophone (Xyl.):** Adds a rhythmic texture with dynamics *mp* and *mf*.
- Piano (Pno.):** Provides harmonic accompaniment with dynamics *mp* and *mf*.
- Violin I (Vin. I):** Plays a continuous rhythmic accompaniment.
- Violin II (Vin. II):** Remains silent throughout this section.
- Viola (Via.):** Remains silent throughout this section.
- Cello (Vc.):** Provides a low-frequency accompaniment, with dynamics *mf* and *pizz* (pizzicato).
- Double Bass (Db.):** Provides a low-frequency accompaniment.

The score is written in 12/8 time and includes measures 295 through 300. The key signature is one sharp (F#).

Fl. 305

Ob.

A. Sax.

T. Sax.

Tamb.

Xyl.

Pno.

Vin. I

Vin. II

Vla.

Vc.

Db.

S

mp *mf* *f*

arco *pizz* *arco*

mp *f*



Fl. 310

Ob.

A. Sax.

T. Sax.

Tamb.

Xyl.

Pno.

Vin. I

Vin. II

Vla.

Vc.

Db.

T

mf *p*

mf *p*

mf *p*

mf *p*

mf *p*

mf *p*

315

U

Fl.

Ob.

A. Sax.

T. Sax.

Tamb.

Xyl.

Pno.

Vin. I

Vin. II

Vla.

Vc.

Db.

ppp

=

320

Fl.

Ob.

A. Sax.

T. Sax.

Tamb.

Xyl.

Pno.

Vin. I

Vin. II

Vla.

Vc.

Db.

mf

ff